

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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Original Correspondence.

FOREIGN MINING AND METALLURGY.

The new year has opened well for the Belgian Coal Trade, there being a great influx of orders, while the high prices recently current are firmly maintained. The navigations, which had been interrupted by floods, have also been resumed. The comparative mildness of the winter has, of course, exerted some little influence on the demand for coal for domestic purposes; but, on the other hand, coal for industrial purposes has been in greater request than ever. The aspect of affairs is encouraging to the coal trade in all the Belgian basins; the only complaints which are made relate to the scanty supply of means of transport, as well as on the State Railways as on the Great Central Belgian system. M. Urban, manager of the last-mentioned concern, has had an interview on the subject with the local Association of Colliery Proprietors, but the results of this interview have not transpired. Upon the whole, there appears to have been some improvement established in traffic arrangements during the last 12 months upon the Belgian lines.

There has been no great amount of business passing in copper at Paris, although transactions may be expected to increase as the month advances. Chilean in bars, delivered at Havre, has made 90*l*. 8*s*. per ton; ditto in ingots, 90*l*. per ton; tough English, 94*l*. 10*s*., and Corocoro minerals, 94*l*. per ton. At Havre, Chilean copper has exhibited a little more firmness in consequence of encouraging advices from England. The range in the price of Chilean copper at Havre last year was from 86*l*. to 114*l*. per ton, the closing price of the year being 94*l*. per ton. At Cologne and Hamburg copper has been in good demand. Tin has been firm at Rotterdam, Banca, with delivery in the spring, having brought 85*l*. to 86*l*.; Billiton has been quoted at 83*l*.; ditto under sail, 82*l*. There has been very little passing in tin at Paris; Banca, delivered at Havre or Paris, has brought 150*l*.; and Straits and English, 146*l*. per ton. At Cologne tin has been in good demand, and prices have advanced. Lead continues in request upon almost all the markets. At Paris, French lead delivered, at Paris, has brought 23*l*. per ton; Spanish, delivered at Havre, 22*l*. 16*s*., per ton; and English, delivered at Havre, 22*l*. 16*s*. per ton. At Marseilles the lead market has been comparatively quiet; at Cologne and Hamburg the article has been very firm. There has been no great amount of business passing in zinc at Paris, but prices have been supported with firmness. At Marseilles, rolled Vieille-Montagne zinc has been dealt in at 34*l*. per ton, with a discount of 3 per cent. In Germany the zinc markets have remained firm.

The intelligence received in France from England is calculated, of course, to give increased firmness to coal prices in France; at the same time, quotations continue to reflect the influence of local circumstances. The sale of household coal, for instance, at Paris has been rather materially curtailed by the mildness of the season; prices have sunk to 4*s*. per ton delivered, and a heavier depreciation is looked for in consequence of large arrivals and considerable stocks at the Aubervilliers depot. On the other hand, industrial coal continues scarce and dear, deliveries not having been resumed with all the activity desirable, and being still interrupted by floods. Upon the whole, neither an advance nor a fall is anticipated for some time in the price of coal in France. The sugar works have generally completed their season; this has brought a certain relief from a consumptive point of view. As the coal production of France, notwithstanding the increase which it has undergone, has become every day more and more insufficient, public opinion encourages all efforts made to increase the extraction. In the basins of the Nord and the Pas-de-Calais the activity displayed in this direction is greater than in any other part of the Republic. On all sides colliery proprietors in these basins are either improving their tools and appliances, or they are sinking new pits; they do not, perhaps, know better how to employ the considerable and exceptional profits which have realised during the past twelve months. The Saint-Eloi (Puy-de-Dôme) Collieries Company has duly provided this week for the coupons which have matured upon its obligations.

The past year was a very favourable period for the development of metallurgical industry in the Rhenish provinces and in Westphalia. The demand for iron was, indeed, so well sustained throughout last year that it was well nigh impossible to satisfy it. At the commencement of the year merchants' iron stood in the Rhenish provinces at 10*l*. 4*s*. to 10*l*. 16*s*. per ton, but at the close of the year it could not be procured for less than 19*l*. 10*s*. per ton. This great advance in prices was not due to speculation; it was the result of more and more persistent orders based on requirements which could only be partially satisfied. As far as can be foreseen this demand is not likely to diminish; on the contrary, it seems probable that it will increase rather than otherwise. Guided by this impression capitalists are preferentially devoting their capital to the creation and development of ironworks. The price of iron minerals also experienced a great advance in the Rhenish provinces last year; at the close of the year the best qualities brought 30*s*. per ton at the mines. The prices of raw materials rose, indeed, to such a point last year that the owners of some of the most important establishments decided to purchase collieries and ironstone mines for themselves. Herr Krupp, for instance, purchased for several million thalers collieries near Essen and some important ironstone mines in the Siegen district. Messrs. Jamb, Hanid, and Huysen and the Union Company, of Dortmund, have done the same. The last-named company has purchased in Sweden some mines of magnetic iron minerals, some blast-furnaces, and some forests to supply them with fuel. The demand for rails in Germany greatly improved last year, and it promises to be very animated this year, as the German Government purposes to proceed with the construction of a large number of new lines should it obtain the authority of the German Legislature to do so. The extraction of coal in the basin of the Ruhr amounted in the first nine months of last year to 10,236,934 tons, as compared with 9,449,567 tons in the corresponding period of 1871. Notwithstanding a great strike, which prevailed in the summer and autumn, the production thus increased in the first nine months of last year to the extent of 738,367 tons.

The French iron trade presents no material change. Few new orders are noted, but prices are supported, nevertheless, with much firmness. Upon the whole, the new year promises well as regards the French iron trade, and no apprehensions are entertained as to a

fall in prices at present; on the contrary, pressing reasons accumulate every day for the maintenance of present quotations. Foreign buyers, who last year took very considerable quantities of French iron, have still very large requirements to satisfy; and as the deliveries made last year gave satisfaction, it is considered almost certain by French ironmasters that they will receive a fresh current of foreign orders in 1873. Attention is being a good deal directed in France to the Danks furnace; several firms in France are also occupying themselves with the establishment of three cylinder-rolling mills upon a new system. Commencing with this month, all exceptional customs tariffs accorded to metallurgical products entering France from Alsace and Lorraine are to cease and determine, and the commercial relations between France and the ceded provinces are to be subjected to the general tariff adopted between France and Prussia.

No important contracts appear to have been secured by the Belgian iron trade during the last few days, and prices remain nominally as they were. At the same time, the tone of affairs has been one of considerable firmness, especially since the receipt of the most recent advices from England. It is pig-iron which is the most scarce and the most in request, and only a very small reduction in prices can be anticipated as regards this article. Refining pig hard iron makes 6*l*. per ton, and casting ditto 7*l*. 4*s*. per ton. A question which is now a good deal discussed is, "How will the new year move on?" Many works have contracts to complete which will occupy them until July, and some contracts will not be worked out until November or December, and this at the prices of the last three months. These circumstances render the conclusion of new contracts rather difficult, as both producers and purchasers maintain an attitude of considerable reserve. The year seems likely to be a good one, indeed it is almost certain that it should be so, even if prices decline a little. A slight fall in quotations would, indeed, be probably advantageous for all parties rather than otherwise, but what Belgian ironmasters most desire is a fall in coal and pig. There are a good many contracts offered on German and Hungarian account, but very few Belgian tenders have been forthcoming; this result has been witnessed because Belgian firms are already well employed, and because present prices leave little chance of much profit being realised from distant affairs. MM. Dureux and Co., of Louvain, recently tendered for forged iron wheels for the right bank of the Oder Railway at 20 thalers per 2 cwts. A Danks furnace ordered at Middlesbrough by the Sclessin Company has just arrived out.

NEW PATENT REVOLVING PUDDLING-FURNACE.

Perhaps there is no sphere of thought or action in which human ingenuity is more conspicuously displayed at the present day than in that of inventing and introducing new puddling-machines. To such an extent has this tendency been carried in the Cleveland district that everyone who is connected with the iron trade, proximately or remotely, considers, or appears to consider, it a duty to himself and the country at large to do something in the way of augmenting the legion of puddling-furnaces now in the market. The custom is like that which prevails among ladies and gentlemen who affect literature, and who deem it an imperative duty to society—and to themselves—to write a book. But this seeking out of new inventions is less to be deprecated than the tendency to write stale books of travel or flat biographies. It has a practical and important bearing upon one of our staple industries, and leads more or less directly to a goal which all are seeking to attain—economy of material and labour. In the Cleveland district puddling-furnaces have been brought out by Mr. Jeremiah Head, the president of the local Institution of Engineers; by Mr. Spencer, formerly of Bolckow, Vaughan, and Co., and now with Messrs. T. Richardson and Sons, of West Hartlepool; by Mr. Crampton, by Mr. Thomas, and others. Not a few of the inventions patented in this district were simply modifications of old and well-known appliances that could scarcely claim to be particularly novel. Others were so novel that they were found to be utterly impracticable, and have been relegated, as they deserved to be, to the limbo of forgotten ventures; while others have retained permanent possession of the field, and are gradually finding their way into public favour. So far as puddling-furnaces are concerned, the idea has long prevailed that they should be constructed on the rotary principle. In Middlesbrough that idea was possessed and enunciated by practical men long before Mr. Danks came over from Cincinnati, and caused such an upset among the Cleveland ironmasters; and at the time his invention was proclaimed to the world there were those in the Cleveland district who were ploddingly endeavouring to attain the same end. We do not here propose to touch upon the delicate and tender question of priority of patents and discoveries, but—just as Professor Clausius, of Berlin, propounded his theory of the development of heat as one of the forces of thermo-dynamics simultaneously with the late Professor Rankine—it is possible, and even probable, that others arrived at the same results as those achieved by the rotary puddling-furnace simultaneously with Mr. Danks, although he may have attained priority of others in the publicity of his valuable invention. At all events, we know that Mr. Spencer and Mr. Thomas have applied themselves for some years past to the perfecting of furnaces having the same cardinal characteristics. In this article we propose to describe briefly Mr. Thomas's puddling-furnace, which is just now a good deal talked about in Cleveland, and with which it is shortly proposed to make experiments, with a view to test its practical utility.

Mr. Thomas is a partner in the Acklam refinery at Middlesbrough, and inventor of the process adopted at that establishment for the refining of iron. He has been working at his puddling-furnace, as already stated, for a considerable time, but it was only at the last meeting of the Cleveland Society of Engineers that he ventured to make its *raisonné* known to the public. The inventor's scheme of a puddling-machine consists of a pan-wheel revolving round a fixed centre. The pan is set on rollers, adjustable with a wedge and screw under the bearings. The rollers, with the pan-wheel thereon, are fixed on a carriage with wheels; by wheeling out this carriage, the revolving pan can be drawn off clear from the fixed centre, which is built with bricks between two hollow discs, supported on a strong shaft. Apertures are made through the centre brickwork for letting in the gas and air for agitating the metal when necessary, and for

letting out the burnt gas, leading it to the stove for heating the air. The revolving, or pan-wheel, is made by setting two or more rings on the rollers, and fixing T iron across them to form the bottom or pan of the wheel. The ends are fastened with angle iron rings, and the cross irons are filled up between with oxide of iron, so as to form the bottom. When working, a small stream of water is run round the angle iron rings at the end of the pan-wheel, to keep down the temperature. Water is also run through the holes that support the fixed centre brickwork. There is an air valve and a gas valve for regulating the quantity to be admitted.

It is proposed to enclose the whole machine with a double-plate canopy, having an air passage between the plates to keep the outside cool. The front of the canopy is intended to be fixed on the carriage, so as to keep off the heat of the pan-wheel from the workmen while taking out the ball. When the revolving pan-wheel is hot enough the metal in the gas-generating and melting furnace is tapped, and runs by gravitation into the pan-wheel. Some cinder or fine oxide of iron is thrown into the pan. Revolving slowly at first, a full quantity of gas and air is kept on to well heat the metal and fluxes. When necessary iron bars are thrust in to stir up and thoroughly mix the metal with the melted oxide. When the iron begins to agglomerate the air is eased off and the gas increased, the damper with the waste gas culvert being lowered. The machine is then made to revolve faster that the iron may turn and fall more quickly. By this means the sub-oxides in the iron are reduced, and by the rapid falling into the cinder the excrescences of the ball will be welded into the ball itself, also being thereby condensed by having its cinders knocked out of it. When the ball is ready the revolving pan-wheel is withdrawn from the centre and the ball taken out. If the ball-wheel requires fettling it is made to revolve, and the liquid cinder is worked from side to side with a rabble until it sets hard. If there be too much cinder an iron ladle is introduced, which lades out the cinder into a bogey to be taken away. The patentee heats his air by the waste steam and waste heat; the air is passed from the boiler into a stove of pipes laid horizontally, and then all the waste gas from this goes into the stove to further heat it. The total diameter of the revolving furnace will be about 7 ft. inside, and the heat is confined by the gutter all round. We need only add that the patentee is now making some of his puddling-machines, and that their merit will soon be fully and publicly tested.

NOVA SCOTIA IRON MANUFACTURE.

THE ACADIA IRONWORKS.

The recent rise in the price of iron has given considerable importance to ores in Nova Scotia—lying within working distance of the magnificent seams of coal which are found in Nova Scotia proper—and the island of Cape Breton. Up to the present day, however, with one exception, no iron smelting and manufacturing works have been in continuous operation. The Acadia Works, at Londonderry, Colchester County, have long been known as furnishing iron and steel of very superior quality, and these are the only existing representatives of an industry which soon promises to become of considerable magnitude in the province. The development of coal mines, the discovery of beds of iron ore in close proximity, and the completion of the Intercolonial Railway in Nova Scotia, with subsidiary branches, point to stirring times in iron and coal, and to a lucrative employment for capital.

The Acadia Ironworks were commenced in 1849, and up to the present day charcoal has been used as the fuel for smelting, and an expensive but very superior iron produced. The Intercolonial Railway has established connection between the coal seams of the Cumberland Basin, at Springhill, and the Acadia Works, the distance apart being about 34 miles, thus facilitating to a remarkable degree the production of cheap iron and the extension of the works. Added to these increased facilities of production, the concurrent advantages to be derived from a considerable rise in the value of the marketable product, the certainty of an inexhaustible supply of iron ore and superior coal, there is now to be chronicled the introduction of new capital, with the impulse and energy which the name and association of one of the most successful and enterprising men of the day—Sir Hugh Allan, of the Allan Line—in the further development and working of the Acadia Ironworks of Nova Scotia.

A brief description of what has been done, and a glance at what is proposed to be done, may place a rising industry, susceptible of immense development, fairly before the mining public, and in a shape hitherto impracticable on account of the great drawback in all new countries—the want of suitable means of communication, now supplied by the Intercolonial Railway and its offshoots.

The Ore and its Distribution.—The property extends over a space of 13 miles in length, on the south flank of the Cobequid range of mountains. At and near the junction of the carboniferous rocks and older metamorphic strata, a great fracture, or rather a series of fractures, appears to have occurred, which is the seat of the veins holding the ore. These fractures have been traced for a distance exceeding 30 miles, and they vary in breadth from 30 to 150 feet. The veinstone chiefly consists of the mineral ankerite, a mixture of the carbonates of iron, lime, and magnesia. The ankerite itself is a poor iron ore containing from 16 to 25 per cent. of carbonate of iron; it is used in the smelting furnace as a flux. The ore itself occurs chiefly in the form of brown hematite or limonite, in the botryoidal, stalactitic, and compact forms. It is from this ore that the furnace is in the main supplied.

Red hematite is also of no uncommon occurrence, and is used to mix with the brown ore in certain proportions. Specular ore is found in small masses and scales; it is used for fettling in the puddling furnaces. It was formerly supposed that the brown ore was the most abundant near the surface, but recent discoveries have established the fact that this ore may exist at any accessible depth in the great fractures on the Cobequid range. At one locality, about two miles from the furnace, adit levels have been driven on the course of the vein (east and west, nearly), which, in a vertical depth of about 350 feet, expose upwards of 20,000 tons of ore, with an increase in thickness of the deposit as the depth becomes greater. The thickness of the main vein of ore is here, at some points, over 20 ft. Masses of the country rock, or "horses," are numerous in the veinstone and occasionally in the brown ore. Sometimes the mass of veinstone assumes the form of a breccia, whose angular particles are

cemented by the mineral ankerite. In the brown ore vein "horses" are not uncommon, and the whole mass of the vein is so honey-combed and vesicular that surface water rapidly penetrates from the highest to the lowest adit level in a vertical altitude of 350 feet. About half-a-mile north of the great vein is another vein, but little is known of its capabilities; the stores of ore in sight being sufficient for several years' consumption. Throughout the extent of the property, a distance of 13 miles, the brown ore has been traced at the surface, and in many places it has been quarried, but systematic mining has only been commenced in the western section. The vein, as proved about two miles to the west of the works, appears to establish the important fact that this extraordinary distribution of iron ore is not generally confined to the surface in a wedge-shaped form, as formerly supposed, but extends downwards to great depths, being, in fact, a true fissure vein, or series of fissure veins, of vast extent and depth. (An excellent description of this extraordinary deposit was written by Dr. Dawson, in 1849, and is reproduced in the second edition of his "Acadian Geology," 1868. Papers on the Londonderry Iron Ores, &c., have been published by Dr. Honeyman in the "Transactions of the Nova Scotia Institute of Natural Science," and by Dr. How in his "Mineralogy of Nova Scotia.")

Cost of Mining.—The average cost of mining the ore, exclusive of "dead work," &c., is \$1, or 4s. 2d. per ton, delivered at the mouth of the level. The ore has to be carted to the furnace, a distance of two miles from one point, and three miles from another, at a cost of 60 cents, or 2s. 6d., and 84 cents, or 3s. 6d., sterling per ton respectively, in the absence up to the present time of rail or tramways. The total cost of the ore at the furnace, with the addition of the "dead work," &c., is about \$2 and 50 cents, or 10s. 6d. sterling a ton. The ankerite or flux is found in abundance close to the furnace, and when limestone is required it is brought a distance of three miles from beds which appear to lie nearly parallel to the course of the veins, or about due east and west magnetic, the variation being 21° west. The mean elevation of the country where the ore is obtained is 600 ft. above the sea level, and the mountain range is intersected by profound narrow valleys, or gorges, at right angles to the course of the vein, and cutting it to the depth of from 300 ft. to 380 ft., so that every facility is afforded for driving levels on the vein at different depths, and winning any quantity of ore that may be desired. Already a level has been driven to the vein at a depth of 350 ft. from the surface, and a breadth of ore of the highest class has been intersected, averaging from 9 ft. to 23 ft.

The Furnace.—There is at present only one blast-furnace in operation, but the construction of another furnace will be commenced early next spring. The altitude of the existing one is 30 ft., its diameter 9 ft. at the boshes, and it will smelt 2300 tons of iron per annum. The blast-engine is driven by an overshot water-wheel 20 ft. in diameter, and 5 ft. in width. The blowing-cylinder has a diameter of 5 ft., with a 5-ft. stroke. The average yield of iron is about 50 per cent., and the consumption of charcoal varies from 135 to 145 bushels per ton of metal. In July of the present year (1872) the quantity of pig-iron produced, and the materials used in the process, were as follows:—

Pig iron produced	222½ tons.
Ore used	497 tons 17 cwt. 1 qr. 18 lbs.
Ankerite (flux)	77 tons 5 cwt. 1 qr. 17 lbs.
Charcoal (hard wood)	31,711 bushels, or 12½ bushels of charcoal per ton of iron.

The former cost of hard wood charcoal was 6 cents a bushel, but during the last year the price has increased to 7 cents a bushel, owing to the general rise in labour and the necessities of life. The works give employment to about 110 charcoal burners, who in 1871 produced 158,140 bushels. The mode of preparing charcoal is that of burning in circular piles, about 12 ft. high and 25 to 30 feet in diameter. The wood is placed upright instead of horizontally; it would be more economically, as experience has proved, to lay the wood horizontally in preparing the heap; a saving of from 8 to 10 per cent. would be effected by adopting the horizontal method, as practised in Sweden.

Swedish charcoal is usually made from the pine; the Nova Scotia charcoal exclusively from hard wood, principally white birch, with beach and maple, and the relative weights of the products would be as 170 (soft wood) is to 227 (hard wood), or 164 lbs. to 219 lbs. for the charcoal bushel. The price of Swedish charcoal is 4 cents for 13½ lbs., and of Nova Scotia charcoal 7 cents for 22½ lbs. In Sweden, generally, 2 tons of ore require 166 bushels of pine charcoal, weighing 13½ lbs. to the bushel, to produce 1 ton of cast-iron. At the Acadia Works 2 tons of ore yield 1 ton of iron, with the consumption, on an average, of 150 bushels of hard wood charcoal, weighing 21½ lbs. to the bushel. At Hull, in Canada, the consumption of hard wood charcoal for the ton of metal was 170 bushels. At the St. Maurice Ironworks, Quebec, the ore yields 43 per cent. of iron, with a consumption of 161 bushels of mixed wood charcoal. At Marquette, on Lake Superior, 140 bushels of charcoal are required to produce a ton of iron from ores yielding 55 per cent. At Detroit the red hematite of Lake Superior, yields 65 per cent. of iron, with the consumption of 140 bushels of soft wood charcoal, and in some of the blast-furnaces in New York and Michigan the consumption is stated to be as low as 100 to 105 bushels per ton of iron (*cide* "Geology of Canada," Dr. Sterry Hunt).

At the Acadia Works the quantity of charcoal consumed in the manufacture of a ton of iron varies considerably. In September, 1871, 223½ tons of metal were produced with an average consumption of charcoal not exceeding 135 bushels per ton. In August, 1871, the amount consumed per ton was 140 bushels. In July, 1872, the average consumption was 142½ bushels, while the general average in former years is stated to have been 150 bushels per ton, which, however, included the charcoal required to heat up the furnace at least twice a year.

It will be readily understood that in the foregoing statements of the relative quantities of charcoal consumed at ironworks in the production of a ton of pig-iron other conditions, besides variations in the quality of the ore, have to be taken into consideration before an accurate comparison can be made. The bushel measure, for instance, used at different works, frequently varies in capacity. At some of the American furnaces the bushel contains 2800 cubic inches, and this is stated to be the usual measure in the Eastern States, although bushels of 2900 and 2975 cubic inches are also used. Hence comparisons by the bushel, unless the exact capacity is given, are loose and unsatisfactory. Again, at some works, the charcoal is measured as it goes to the furnace, while at others the quantity received from the charcoal-burners is made the basis of calculation. Experience shows that the difference in the mode of measurement causes an apparent consumption of 8 or 10 per cent. more charcoal when the amount received from the charcoal-burners is adopted for comparison. At the Acadia Works this is the method pursued.

Pig-iron produced.—The total amount of charcoal pig made at these works, from their first establishment, in 1849, to the present time, reaches about 30,000 tons, of the aggregate value of \$968,000, or 200,000 sterling. A considerable portion of this has been worked up into bars, steel, &c., in various subsidiary departments, which will now be described.

The Forge.—Adjoining the blast-furnace is the forge, a building 180 feet long by 60 feet broad. Here are five puddling and one heating furnace; a 50-horse power steam-engine for driving one set of bar rollers and one set of sheet rollers. A 12-horse power engine is used for driving the fan supplying the blast to the furnace, working the force-pump, and the bar shears. There is also in the forge a 25-cwt. steam-hammer.

The Steel Works.—These are in a capacious and well-built structure, 250 feet by 40 feet in dimensions, and situated about a quarter-of-a-mile from the forge. They contain one smelting furnace with eight holes, capable of turning out 2 tons per day of crucible steel; one converting furnace with two pots capable of converting 20 tons of bar-iron each charge. Two steam-hammers, one 20-cwt. and one 7-cwt. Three heating furnaces; one flue boiler, 20-horse power; one engine, 8-horse power, for driving fan, &c.; one 25-horse power engine, with 10-inch train of rolls. The cast-steel produced here is equal to the best Sheffield brands.

The Casting-house.—Adjoining the steel works is an extensive establishment for castings, among which chilled wheels for railway purposes are the most prominent. In 1871, 3315 car wheels were

manufactured, and in nine months of last year the number of car wheels produced reached 3769. These wheels are sent to different parts of the Dominion, a few have also been dispatched to Mexico and to India. This department of the works is carried on in a T-shaped building, the total length of which is 310 feet, with a breadth of 40 feet. It is supplied with two furnaces, and excellent and powerful machinery for all the details of the manufacture.

Future Prospects.—The completion of the Intercolonial Railway, and its connection by short branch lines with the Acadia Ironworks on the one hand and the Springhill coal seams on the other, will effect a great change in future operations. Hitherto every article not produced on the spot has been carted from Truro, a distance of 21 miles, at an average cost of \$4, or upwards of 16s. sterling, per ton. Carriage by rail will reduce the cost to one-eighth of the past rates, or even less. The company have constructed about nine miles of excellent roads to the adit levels where the ore is stored, and at present about 4000 tons are maintained in store in advance of the furnace, from the great deposits which have been reached. Another 4000 tons lies ready on the surface of the ground, having been obtained from surface workings.

The Springhill coal, from the fine eleven-feet seam opened by the Springhill Company, which has been shown by experiments and analyses to be of the best quality, can be laid down at the works on completion of the short branch line to the Intercolonial, now in course of construction, at a cost of \$216, or 9s. sterling, per ton. The requirements of the ironworks will reach 40,000 tons of coal per annum on completion of the second blast-furnace, and their influence will necessarily be immediately felt to the advantage of the coal proprietors and the authorities of the Intercolonial Railway. In view of the great abundance of ore now known to exist far and wide on the flanks of the mountain range where these works are situated, and the great facilities which easy and cheap transportation by rail will afford, coupled with an abundant and accessible supply of cheap fuel of excellent quality, it is not unwelcome to predict a future industry in the Cobequid Mountains, which will exercise considerable influence upon the prosperity of the province. H. Y. H.

THE UTAH SILVER MINING COMPANY.

Sir,—Finding the points raised by Messrs. Bennett and Taylor against my management of this company's property, as also the remarks of your correspondents, "Utah Shareholder" and F. Bennett (who, by the way, seem to be one and the same), so very unfair and illogical, and being evidently so made as to lead the Utah shareholders into an unfair prejudice towards me, unless the other side of the question was placed before them, that I am obliged to trespass on the columns of the Journal to do so.

Mr. F. Bennett's chief aim seems to be to advertise himself and his friend, Mr. H. Sewell, as the "eminent mining engineers and metallurgists," *par excellence*, and whose mission they themselves would have the mining public believe to be to guard, defend, and protect the interests of the Utah shareholders in particular, and all mining shareholders in general. Mr. Bennett seems very desirous of obtaining the credit for his friend, Mr. Sewell, of having first recommended the new style German jiggers, and dressing of the ore, &c. Now, were it even true it would matter little to the Utah shareholders as long as it was not possible to carry it out; but, as it is not true, it is well to set them right on the point. To do this I must state that, having only commenced work on the mines Jan. 19, 1872, on the prospect then before me, it was well towards the end of February following before anything like evidence to justify the outlay for permanent works was presented; and then, from the excessive flow of water in the ground, which left it impossible to mine without machinery, the first thought naturally was to provide means to work and prove the mines. This I did with the small amount of money at command, after paying off the old indebtedness of the company. Although then strongly believing in the great advantage to be gained in dressing the ore, I could not enter on the plan, well knowing that all the money at command was more than required to prove what the property was. What could I do in the absence of means to do it with, even had I been satisfied of the permanent merits of the property, which at this time I was not? It was some time about the middle of March following when, in conversation with Mr. Sewell, and while describing to him what I intended doing as soon as means would permit (to dress the ore by the use of the old German jigger, the buddle, and other contrivances for concentration with which I had long experience), that Mr. Sewell said I ought to try some of the new style German, or continuous, jiggers, which he said were in use at the Van Mine. This is the first time he ever spoke of jiggers, or dressing of the ore. And now, let me tell Messrs. Bennett and Sewell that they should first learn what these new style German or continuous jiggers are, and how far they are adapted to the purpose in question, before they undertake to advise their use exclusively on the Utah Company's mines. Let them go to the Van Mine, where they will see and hear much which they, as eminent metallurgists, ought long since to have known—that these jiggers, so much harped upon by these gentlemen, are only used for separating the last traces of metal from the tailings, they being deficient in dispatch for the better grades of ore. Here they would see, on the three most extensive lead dressing-floors in the world, I believe, under the most practical and capable man (Captain W. Williams), that out of some 150 pieces of dressing machinery he only employs 10 of those new style German jiggers, and that he (Captain Williams) does not want any more of them, and that they are only used on the tailings, while the balance of the dressing apparatus consists of the revolving sweeps, old style German jiggers, and buddles, with a few other very simple contrivances of the captain's own invention, which, with a set of Cornish rollers, I always held to be the very thing that was wanted to dress the Utah ore. Well knowing the cost of erecting a dressing-floor, I could not attempt it without money. My only course, then, was to develop the mine with what funds I had, and resort to smelting (to which I was always opposed up in the mountains), as a source of revenue to assist in proving as much as possible the value of the mines; in this I was successful, to the amount of \$8331.

Mr. Bennett's charge of deception, as he calls it, where he says I did not include cost of purchased ore in smelting cost, should hardly need explanation, as anyone can see in the item of total mining cost of the 1504 tons smelted must include in the charge of \$10,971 the price paid for ore purchased, as can be seen in weekly reports of smelting, and set down in my report. Mr. Bennett seems to lay great stress on the remark of Mr. Clayton, where he says, "that buying ores from adjacent mines was like carrying coals to Newcastle, and that he (the Professor) could not see why the western portion of the company's property should be so long neglected," &c. Why, or how, the Professor has fallen into this error I cannot understand; a man of his usual caution in such matters, and one who takes so much pains in his examination of mining properties, could only do so by being misinformed as to the western boundary of the mines. All the works of the property are placed on the western limit of it; the main tunnel on the Red Warrior; the tunnels to the Dartmouth and Belshazzar are on the very end of these locations to the west, and the discovery made of carbonate ore in the Dartmouth Mine in September and October last is right on the extreme western boundary of that mine and the Belshazzar. And he should have noticed several hundred feet of levels, drifts, and tunnels run in fruitless search for carbonate ores in the very locality referred to. It does look as though the Professor was examining the ground through a pair of Bennett-Sewell glasses when he discovered similar ores to those contained in the West Jordan Mine of the same carbonate class, &c. No one could have wished more earnestly than myself that it were so, or have tried harder to prove it so, than I did; and that it is not so, with the exception of the discovery made in September last on the extreme west end of the ground, I can only regret.

This discovery by the Professor, and heralded by Mr. Bennett, is in keeping with that made by Mr. Bennett's friend—Mr. H. Sewell—of "Thousands upon thousands of tons of rich gold ore" in the fall of 1871 in these mines, for not having mentioned which in my report to the board on June 5 Mr. Bennett took me to task before the directors at that meeting. Now, this reputed discovery was made towards the latter end of September, 1871, and immediately

thereafter circulated in London by Mr. Bennett, and persisted in even to June 5, 1872, by that gentleman, as above stated, when there was not a shadow of a foundation from the first to the present that 1 ton of such ore as \$384-87 per ton existed in the property, much less "thousands upon thousands" of tons, as expressed by Mr. Bennett, of ore of that value. Mr. Bennett further claimed on June 5, 1872, that 40 tons each day could be taken from the mine of 65 per cent. lead ore, with \$24 per ton silver, giving Mr. Sewell as his authority. Now, were this true there would be little necessity for dressing the ore, as 65 per cent. ore is good enough if it were to be found in such quantities as 40 tons each day; but, like his \$384-87 per ton ore, his saying so unfortunately did not make it so.

Now then, when it is known that Mr. Bennett's source of information being through Mr. Sewell, as he states himself, and that the last time Mr. Sewell ever saw the property was in Sept., 1871, when, as it is well known, the last underground development of any kind on the mine under the old management was discontinued, the carbonate ores were then declared by the managers to be exhausted, except some slight prospects on the surface, and nothing was in sight but a large mass of iron pyrites, carrying from 12 to 18 per cent. of galena; and yet, with all these facts before these most eminent metallurgists, they then and there advocated the building of four 40-ton (each) furnaces, right up at the mountain tops, when there was not 50 tons of ore—except the sort above mentioned—anywhere in sight in the whole property, nor 1 foot of downward development done on the mines. There were two immense veins exposed in the old tunnel, run by Buel and Bateman, the one 30 ft. wide, and the other 56 ft. wide of the grade of ore above mentioned, and yet those eminent engineers and metallurgists did not then, nor at any time since, advise or suggest dressing the ore until I had first proposed it. I suppose it suited their purpose better to make the mining public of England believe there was the most urgent necessity for three additional Elephantine furnaces to the one then in course of erection. It was at this very time (how happy the coincidence) that Mr. Sewell discovered the "thousands upon thousands" of tons of \$384-87c. per ton in gold and silver. To all of this Mr. Bennett most strenuously adhered, even to the 5th of June following, eight months after the imposture was foisted on the London public. And no longer ago than Dec. 20 last Mr. Bennett at a meeting of the Utah Committee, claimed the property to be most valuable, because Mr. Sewell wrote him it was so, while Mr. Sewell positively never saw the property since September, 1871. But it may be asked what the object could be of all this? The answer is plain; and it is this—The exaggerations of this party had run the stock up to a premium of 15½ a share in July and August of 1871, and they must try and keep it up as long as possible to gamble on it. It answered their purpose much better to tell the people of London there were "thousands upon thousands" of \$384-87c. per ton ore in the mine than to give the Utah shareholders the benefit of their scientific lore, and advise the use of dressing machinery at the very time of all others, it should have been done, instead of building four 40-ton furnaces, as there was not a ton to be seen anywhere in the mine of 45 per cent. lead ore, until I opened it out in January and February, 1872.

Mr. T. G. Taylor charges me as being the cause of running up the shares to a 15½ premium by my reports and statements, and that he knew some of my friends to have sold out at 15½ advance. I do believe Mr. Taylor to be too much of a gentleman to make any such statement, knowing it to be false, and I can only think that he must have been talked into it by some of his happy family to cover up their own foul deeds by charging them on me. It is but too well known that for nearly two months previous to the sale of the property to the Utah Company I had nothing whatever to do with it, being busily engaged smelting Flagstaff ore, and that until Jan. 16, 1872, I never communicated a single line to any director, shareholder, or other person, on any such subject, in London or elsewhere, except one letter to the Journal. Let Mr. Taylor, like a man who is disposed to be fair, give his proof. I did not know a single shareholder in the concern but Mr. Bateman, and he has never yet sold a share, even to this day. Let anyone look through my letters written to the directors, copies of all which are before me, when they will at once see whether my estimate of the property has been overdrawn or not. As to my "concealing," as Mr. Taylor sees fit to call it, the indebtedness of the company, I have nothing to say here, it being fully explained in my printed report to the directors.

Mr. Taylor lays much stress on the remarks of Professor Clayton as to management, dressing ores, &c. The Professor's remarks are, in substance, exactly what I stated to him as well as to hundreds of others with whom I conversed on the property and its mode of treatment, and what I had held, too, since last March, that should be done to make the ores pay. But money we did not have, while it required money to do it. Mr. Taylor preferred to make all his charges *ex parte*, and desired I should not be present; had not Mr. Taylor insisted on this piece of unfairness towards me matters which I am now obliged to explain in public print could have been set right in a few words at the meeting, had I been granted the privilege of being present, which undoubtedly was my right. But this did not suit Messrs. Taylor and Co., who had, as they stated in public, made up their minds that the directors and superintendent must be turned out as a matter of expediency, although they admitted there was nothing wrong to be said of any of them. This obnoxious clause (No. 5) in the committee's report they were obliged after hard fighting to strike out, and the last dying kick of the official life of these three gentlemen of the committee, backed up by eight others, was to order that I must not be sent back to manage the property. Remember, this is the act of 11 shareholders out of 450 who constitute the company, and against the wish of the directors and other shareholders present, there being but about 18 shareholders at the meeting.

I had already sent in my resignation at the end of the year, but at the earnest request of the directors withdrew it, leaving the matter in their hands.

Mr. Bennett charges that by my method of smelting 50 to 75 per cent. would be lost of the lead, and that the ore treated by me were only 35 per cent. in lead. Had this been true, it would have required 7 tons of ore to produce 1 ton of bullion, and I would have had to smelt nearly 4000 tons of ore to produce the 538 tons of bullion sold, instead of 1504 tons of ore, which is the correct amount reduced. He had the true facts before him in my report, where he could have seen that the average of the ore smelted was 45 per cent. That 1504 tons was reduced, from which 538½ tons of bullion was made, and that 80 per cent. of the lead was obtained, all of which are matters of daily record at the company's works by the company's clerks there, and duly reported to the directors, from which the report was made, and not by hap-hazard statements as made by Mr. Bennett, of a most absurd and ridiculous character.

As to my knowledge of smelting, &c., of which Mr. Bennett claims to have proved I possessed none, I shall have something to say in my next on that and many other points connected with the Utah and Mr. Bennett, as also on Mr. Taylor's statement, that "Americans know nothing of lead smelting, he being so informed by Mr. F. Drake of the Eberhardt."

Your correspondent, "Shareholder," questions "If I wrote my report to the directors," and says I "spent 11,000£, in useless experiments, and that there was nothing to show for it." To this I have to say that nothing but the most unfair prejudice towards me could have instigated such conclusions from any sane man in the face of the facts before him. My "experiments," as he calls the smelting of a most refractory ore, did not cost 11,000£, nor 1£ of the working capital, as there was a profit made for ores smelted of \$8331; and for the 11,000£, he has from 1500 to 1600 ft. of development on the property, by which its character is well proven, with hoisting works and working shaft, which cost nearly one-half of that sum, with several thousand tons of ore proven to exist, where 1 ton could not be relied on when I took charge. As to my writing my report, I can only say I use no man's brains in doing work of that character. I did write it, Mr. Shareholder; and before I am done with this subject I shall write some more, which will require much explanation at the hands of "Shareholder" and his partisans to set them right (if that is possible) before the mining public of London. In my next I intend to answer other remarks made by these gentlemen,

when it will be seen that I was from the first opposed to smelting the ores up in the mountains, or building of furnaces there. I will also give the proof that no men could have tried harder, or in a more honorable and honest way, to second my most earnest endeavours to bring the property round to a paying basis, which we were on the eve of doing, than did those same directors who the committee of three proposed to displace.

JOHN R. MURPHY.

CLIFTON MINING COMPANY, COLORADO.

SIR,—Your correspondents, John Johns and H. B. Grose, in the Supplement to the Journal of Jan. 4, have made such statements that I think I should be wanting in duty not to notice them. The first general impression conveyed by their writings is antagonistic to Colorado as a mining country. It is so absurd to enter on an argument on this point, since Colorado has been admitted to have exhibited at the Paris Exposition of 1867 "the finest lot of specimens ever produced," that I shall not touch the subject; but the ignorant, ill-judged, venomous remarks in reference to the Clifton Mine require some comment to be made.

One says "The mine is poor, and unless the lead ore can be turned to account I fear there is little chance of its ever paying the expense of working." This sentence alone shows the ignorance of the writer in regard to the nature of the mine. While it is quite true that if the lead were made profitable it would be a great gain to the company, is it equally true that if there was no lead in the mine it would pay handsome dividends. Does he know that an offer for the ore on the ground has been made, which, although not half its value, would be a profit over its production? Does he know that the reports in reference to the mine from (nearly) all sources, interested and disinterested, are exceedingly favourable, and much more encouraging than those upon which the mine was sold to the present company? In fact, what does he know? Why should he draw a comparison between "the Clifton," a silver mine consisting of nearly a mile in length of continuous lode, and about double as much contiguous, and "the Champion," a gold mine of some 600 or 800 ft. length?—especially when he infers that the difficulties of the latter property would be covered by the company buying another 100 ft. Your correspondent, "John Johns (late of Cornwall)," says: "I have worked in the Clifton Mine from the commencement, and know everything respecting it." If (as he signs himself) late from Cornwall, he could not have been working in the Clifton Mine since the commencement, which he probably does not know the date of.

In conclusion, I will only say the letter is only intended to leave an untrue impression on the minds of your readers.

ONE WHO KNOWS.

THE ROCKY MOUNTAIN MINING BUREAU OF COLORADO.

SIR,—Your attention is invited to the following extract from the United States Mining Law of May 10, 1872:—

Sec. 5.—On each claim located after the passage of this Act, and until a patent shall have been issued therefor, not less than \$100 worth of labour shall be performed, or improvements made, during each year. On all claims located prior to the passage of this Act, \$10 worth of labour shall be performed, or improvements made, each year for each 100 ft. in length along the vein, until a patent shall have been issued therefor; but where such claims are held in common such expenditure may be made upon any one claim; and upon a failure to comply with these conditions the claim or mine upon which such failure occurred shall be open to re-location in the same manner as if no location of the same had ever been made.

You will see that under this law, on and after May 10, 1873, all mines in the United States will be open to re-location—that is, the right of present owners be forfeited—unless a certain amount of labour be performed, or improvements made, upon each mining claim prior to the last-named date—provided, however, a United States patent shall not have been applied for, or issued, for such claim or claims.

One purpose for which this Bureau was formed is that of protecting the interests of non-resident mineowners under this new law. The Bureau is now prepared to direct and apply the necessary amount of labour or improvements upon mining claims anywhere in Colorado, in accordance with the requirements of the law. It also has facilities for securing United States patents to Colorado mines with promptness, and at reasonable rates. The requisite fees, &c., for procuring patents will be advanced by the Bureau for responsible parties, if desired.

FOSTER NICHOLS, Secretary.

Central City, Colorado, Dec. 4.

N. ENNOR ON LEAD AND TIN SMELTING—No. I.

SIR,—Having finished my last on dressing contaminated ores, I now notice the remarks of three or four on stamping rough and fine. To me it really appears that these writers are interested or forgetful, and do not know what they read. After this letter I will, in reply, remark as to what I have written. I promise now to take up tin smelting, and after a few brief remarks ask smelters a few questions on smelting.

I know a little of lead mining and smelting. I had lead dressing under my eye for over 30 years, and made slime pits and filled them, but I never took the trouble to claim the contents of one. I might have made a mistake in not doing so, but in productive mines, from which I paid handsome yearly dividends, I left the slime pits full, and the vast heaps have since been slightly handled over, but no one made a fortune from them. But the slime, odd as it may appear, they never touched, and the mine is again being worked. I wanted building sand, and asked them to allow me to take it from my former slime pits. I obtained leave, and carted off many loads. A great deal of it remained, which had been there 40 years. I am not aware that they have attempted to take lead from what is left. I never had a buddle or a slime-frame on the mine.

At Pentire Glase Mine, when it was making large returns, it had a large pile of brickwork. Skimpings from such ores are now crushed by rowles, which is one and the same as skimpings. I asked the captain and dresser what they intended doing with it; they said, "Erect a stamp, and stamp it." I said that the lead would not pay for the stamps. As a trial, I put a boy to jig it, and found they could take out 1 lb. per minute. He took out 1 ton of it, and I took samples, and was offered 9/5s. per ton for it, but they persisted in it that it must go to the stamps. I offered the company 1000, and pay the dues, for the heap, but they would not sell it. They erected a stamp, which cost 6000, and stamped it all, and got 60% for the lead they caught. The sea beach was as blue as a needle with small particles they could not catch, but they never attempted to tell me what became of the lead I had offered 1000 for, and they would have it that there were hundreds of pounds worth in it when they commenced. In that case it must have swum out to sea in atoms. This is a strong shade of proof of what does actually go off in atoms. I remember once going out to the Liskeard lead mines with the present Mr. Hawke, of Liskeard, in the evening, and I found I was surrounded by captains from every lead mine around the place, when I told them they were reducing their lead too low, by which they wasted a great deal of it, but they would not have it. I contended that they should, after taking out the rough crop lead, work over all the remainder as rough as possible, take out the crop, and let the remainder go as a second parcel, when they were all down upon me, and fightable. Had not Mr. Hawke and one or two others been there to keep peace it would have been a fight. Then I ask, how long they were before they found out I was right, and made two parcels of their lead? and all the lead miners in the West of England fell in with me. I have often looked at the rivers of lead mines in Wales, and in lead hills in Scotland, and the stream is blue-bottomed for miles.

I was asked a few weeks since, when in Anglesea, by the agent of a North of England lead mine what was the best way to catch slime lead. My answer was to make none worth saving. I may make a few further remarks on lead, as most men know of the expensive lawsuit I had on the Mendip Hills for dirting the water going to a paper mills (we were over 30 days in Court). To prevent this I had over 20 catch-pits; the water from the last, to the eye, was clear enough to drink, but if you stood on one side in a bright sunny day you could see like small bright stars passing. I then turned the water into a half-acre pond, to filter through, with no other outlet. After the lawsuit was ended there were a few inches of sediment in the pond, and it was thrown out as worthless, to get at what we considered better slime beneath, worth 6 per cent. It soon baked up,

but when rain came we were all surprised, it looked so like lead. We took a sample and assayed it, and it was worth 12 per cent. When put into the pot it all flew off in smoke. We baked it into bricks, and threw it into the flowing-furnace, and there we caught the lead. We even smelted some other slimes, which only produced 6 and 7 per cent. But to get over these points I was for years battling with the smelters before they would touch such lead ore. They said it would destroy their furnaces. I sent off one parcel worth 40 per cent. for lead, but foul with blende, to a smelting-house in Bristol, and I never got a shilling for it, but I carried my point in the end. Smelters will now jump at any contaminated ore with only from 10 to 15 per cent. of lead in it.

All my remarks go to prove it is bad policy to reduce lead or tin too low, and shows the quantity which goes off in minute particles and atoms. I am quite aware that the tin miner has a battle to fight with the smelters before he will get over them on these points, but I only ask the smelter to lend a helping hand to aid in catching the tin going to sea. This is tin forever lost. The squatters' tin is not lost to the smelter nor to the community; it is only lost to the mine workers, but the smelters must know that it is the youngest and very best of the tin which goes off in atoms; and I know this, that rough contaminated lead in a pot will bring out a better produce than slime lead will, if you mix the same percentage of waste with the slime that the rough lead contains. This I know by practical experience, lead is an evaporating ore in smelting.

I next come to TIN; it does not evaporate to any extent. In that case I ask the smelters what there is to prevent them from smelting tin in the rougher state—say, only worth 50 per cent.? Remember, I am not a bigot on any point, but open. I am not saying I am right. Let me first hear their argument. I ask them all for the good of the nation at large, or I might say the world, to give this their serious consideration to meet me. I will now explain that if you smelt tin at a standard of 50 per cent. the ore must not be stamped at so low a size. Then this will tell upon tin in a fine-grained stone; it will allow it to be stamped one-third larger than the good hitch tin, and would go to the smelting-house in place of going to sea, like Pentire Glase lead did, in atoms.

N. ENNOR.

[To be continued in next week's Journal.]

MINERAL RIGHTS IN THE FOREST OF DEAN.

SIR,—Your correspondent, "One who Knows," challenges me to disprove the accuracy of his statements. In the *Mining Journal* of Nov. 30 the report he vouches for states that the Deputy-Gaveller determined to make the grant to Joseph Jones, and this he adds "was done." Now, without disputing his title to the suggestive *alter* your correspondent has thought proper to assume, I have only to refer him to an advertisement inserted by the Crown in the *Forester* newspaper of Jan. 10, announcing the intention to make the grant on Jan. 31; it could hardly, therefore, have been granted as stated.

But your correspondent states, "Now the Deputy-Gaveller determined to make the grant to the new applicant, and the Messrs. Brain were perfectly cognisant of it." Of this there can be no doubt whatever, although at the request of Messrs. Brain a section was brought forward which had been prepared for another purpose by the Deputy-Gaveller himself, and which showed that the depth of the Penswells Iron Mine was even greater than was assumed by the Messrs. Brain, and which clearly demonstrated that the site of Jones's application, as shown by his own witness, Symons, would be drained and covered by the last-mentioned iron mine, the property of the Messrs. Brain—the "formidable appearance" (sic) of the "series of seven sections and two plans produced by Messrs. Hoskold and Co. notwithstanding. In the progressive state of the manner of granting gales in Dean Forest your correspondent's idea of a "geometrical" grant will not, it is to be hoped, be lost sight of at Jermyn-street.

FORESTER.

LOSSES IN THE DRESSING OF ORES.

SIR,—I have read, as most of your numerous other readers have no doubt done, the remarks of your correspondents on the loss of tin from those mines bordering on the Red River. It cannot for a moment be supposed that the loss of tin from these mines is greater than that from other mines, wherever situated, as the methods employed in tin dressing are generally similar at all the mines in this country where tin is produced. It is well to take a dispassionate view of this subject, as the dressing of ores is one of the most important items in mining, both as it relates to costs and the returns. I was forcibly struck with this fact when I first became a mine agent, twenty-two years ago. The *Mining Journal* brings to our notice from time to time some statements of a truly startling character. It appears that about 6000 tons of tin are annually returned from the mines which empty their wash into the Red River, and that one-seventh of the gross proceeds of the mines is estimated to be lost in dressing. Now, one-seventh of 6000 tons would be 857 tons odd, and that, added to 6000 tons, gives 6857 tons as the gross proceeds of the mines, the loss of one-seventh of which amounts to upwards of 9794 tons. If the case rested here, startling as the loss may appear to be, I fear it would be difficult to prove that such a loss was not sustained; and nothing, therefore, would remain to be done in the proper order of events but to devise means by which such a loss might be curtailed. But when to the former is added another representation of the case, showing as before 6000 tons as the annual returns from the mines, but 50,000, per annum as the returns of the workers on the river, which sum would be equal to near 610 tons if dressed to as high a percentage as the crop tin from the mines, making together 6610 tons, being 247 tons less than the former view represented, to compensate for which discrepancy, however, it is stated that a great deal of tin from the mines is carried in solution in the water to the sea, and that the sand along the beach where the river discharges itself into the sea is worth 1/1 per ton for tin.

Now, this being an unqualified statement, upon the authority of a second person, nothing remains to us but to accept it as it stands, or to subject it to a process of investigation by the light of facts or probabilities, as the case may be. If we assume that the proportion of tin saved at the mines is 24 per cent. of the gross tonnage of tin-stuff reduced at the stamps, then the quantity of sand and slime carried annually down the Red River into the sea cannot be far from 292,500 tons, which at 1/1 per ton would show an equal number—292,500, equal to 3567 tons of tin of the average percentage and money value of that returned at the mines, making, with the quantity returned by the dressers on the river, an aggregate loss of 4277 tons, which would be more than 70 per cent. of the amount saved or of the aggregate amount raised at the mines, independently of the quantity said to be carried off in solution. Thoughts involving doubts forcibly suggest themselves to the mind in view of the foregoing figures and estimates. Is there no exaggeration here, or are not statements made absolute, or only slightly qualified, which should have been highly and emphatically qualified? All exaggeration is unnecessary, and not only so, but will work more harm than good. It would not be necessary to dwell on this part of the subject if all your readers were sufficiently acquainted with mining to draw correct conclusions regarding the matter for themselves; but as this is not the case, and it is important, adversely to the mining interests, that many do believe the statements furnished in the *Mining Journal* in their most unqualified and broadest sense, as they are quoted and made use of in your columns as the basis of remarks—serving as texts for comment, as through they were unquestionable and universally accepted truths. One-seventh of the tin lost would be represented by 14-235 per cent. of the quantity saved at the mines, and that is said to be a greater loss than used to be the case in former times—a position which I think will need confirmation, or, at any rate, a qualified explanation.

In the first place, was the tin then disseminated throughout the stone in similar fine particles as it is now? and was the proportion of loss to the ores tested by anyone, if at all, besides the persons who had charge of the stamps, and whose interest it would be to reduce to a minimum the proportion of loss to the quantity saved? If we really lose more tin in dressing now than was formerly the case, our supposed mechanical improvements can only be a delusion and a snare, and our experience retrogressive and bewildering. To say nothing of the waste of money our mistakes have led us into. Instead of progressing we have been retrogressing, and the supposed lights we had flattered ourselves to possess as the acquisition of in-

creased experience by practice and experiment on mining subjects generally, and on this one in particular, has tended only to lead us into still deeper darkness, and to render confusion worse confounded. If this be the case what encouragement can there be to adopt changes which may lead us still further astray, and what assurance can the miner have that other proposed changes may not lead him into still greater errors?—*Liskeard, Jan. 15.*

ROBT. KNAPP.

UNCERTAINTY IN MINING—No. II.

SIR,—Resuming the subject of uncertainty in mining, we may assert that there are no grounds to warrant us in supposing that the cause of the deposition of metalliferous veins is hopelessly involved in obscurity and oblivion. While we do not apprehend that the solution of this difficult and important question is at hand, we believe as our culture increases, and our minds are more directed to the observation and study of such complex phenomena, that a true cause or causes will be discovered, and that our explorations will be influenced and guided by knowledge which is based upon a wider and more accurate foundation than mere observation of indications; that, indeed, we shall direct our operations according to laws which have their assigned place in the economy of nature. We believe also that such an advance in knowledge, and such a desirable accomplishment, is not so remote as may at first sight appear; it may come to us as the outgrowth of a rude guess, or possibly derive its existence from the elaboration of some crude theory: we should not deride or despise any attempt to remove the ambiguity at present associated with so important an industry. Dreamers we have had in abundance, and perhaps in their very dreams some germs of truth have existed, which if examined and investigated might have led to the establishment of general principles.

The citizens of Magnisa had no conception that the discovery of magnetic rocks in their vicinity would lead to such important results as we now witness by the application of magnetism; nor could the most far-seeing man anticipate the formation of a branch of science so extensive and complete from such an accidental observation; and when Franklin made his kite the winged agent for transmitting and conveying lightning from the clouds to his jars, he had not the most remote idea that he was introducing a means of communicating intelligence which would surpass and exceed the highest expectations. We traverse the sun by the aid of magnetism, and discover unknown lands; and we now make the unruly electric fluid our most trustworthy Post Office official. Such are the effects of two casual occurrences. Now these agents are so intimately associated with our commercial and social wants that we cannot conceive the existence of any civilised community complete without their presence.

We assume there are but few men who will not readily concede the importance and desirability of the object we advocate, and who will only raise objections because of the difficulty connected with it. We admit that the circumstances which surround men's lives are entirely antagonistic to the exercise of calm and dispassionate thought; that the necessities and demands of life, the ceaseless activity and requisition which presses upon all men who have to earn their bread by some form of labour, unfits them for investigations which would seem to require undivided attention. But opposed to this statement may be cited the coincidence that the busiest men have been those who have given to the world the greatest and most valuable thoughts. There is one fact too apparent to be contradicted: it is this, that capitalists who could encourage and aid such a work with the least inconvenience to themselves generally exhibit the greatest indifference towards it, and only aim to reimburse themselves for their outlay. We would remind them, however, that the reaction of this selfish policy falls most heavily upon themselves. They have to bear the loss and disappointment which result from misapplication of capital, and are frequently called to experience to the utmost degree the evils which are contingent upon ignorance. But it will be asked are there no means at our command which will enable us to control or mitigate the loss consequent upon the inseparable connection of uncertainty and mining adventure? We believe that if ordinary attention were given to the causes which ensure success many of the evils would be altogether avoided, or reduced in their intensity and effect.

We will suggest a few remedial measures, which are always under our control, and, although apparently of no moment, perform their share of work in producing disaster and chagrin. We should receive with a large amount of caution and reserve the advice of an inexperienced, incompetent sharebroker. There are many of this class around us—miners of mushroom growth, men who inflated by a temporary success are not content with simply selling and purchasing, which no doubt they are very well able to do, but assume, with unwarrantable assurance, the position of advisers. Impudence is, perhaps, useful sometimes, but always mistrust an impudent sharebroker. Another important thing to remember is not to invest a single farthing in any mine when it is ostensibly held by sharebrokers. However great their pretensions towards legitimate mining, we know it is opposed to the best interests of their vocation to remain content with the quiet and consistent prosecution of an adventure. In the familiar slang of the fraternity, they go in for a swim, meaning thereby the creation of a feverish, unnatural excitement, the creation of false values, and the circulation of misleading and sometimes damaging reports. The promise may be fair, but the issue will be fallacious. These may be thought severe strictures, but are they not true? Sharebroking, as we now know it, is a species of gambling, which escapes, and barely escapes, legal interference. While so conducted, avoid the unclean thing, and seek a channel for the employment of capital which is less dependent upon telegraphic agency.

Closely connected with this suggestion is the proper selection of agents; for we very well know that if certain men did not obtain appointments the designs of not very particular shareholders would be frustrated. It does appear most preposterous that, in the face of our boasted moral advancement, our mining industry should be weighted and retarded by agents whose moral delinquency is a by-word and reproach; and yet, perhaps, in no branch of commercial enterprise is integrity so essential; and it is strongly inconsistent with this condition that more men whom it is easy to impeach with defective reputation find their way to positions of trust in this department of trade than any other we could name.

We do not say to counteract this evil select men who are professing religious, for many of these are adepts in ceremonial and canting phrases, but real laggards in moral actions, men who are sophisticated enough to pull a long face, but are open to a peculiar palmistry. We have these in abundance; they pray well, they preach well, but they are fitly represented by that Emperor of Russia who after saying grace swallowed Poland. What we want are men of tried worth and independence of character, who will not readily submit to the dictation of a greedy shareholder, or the propositions of a speculative adventurer; men who, confident in their ability, are willing to stand or fall by the exercise of knowledge and the practice of honesty, who are sufficiently self-reliant to contemptuously spurn the cloak of religion, and the dishonest support of unscrupulous dealers, to sustain them in their situations.

But there is another aid we can call into requisition, and that is the uncommon quality of common sense. So long as we hold this faculty in abeyance, so long as we manifest a greedy avidity for rash enterprises, and for schemes which have their only foundation in the active and morbid imagination of some ready-witted promoter of public companies, so long will continue to follow the recurrent train of disappointing circumstances. We may demur, grumble, and abuse to our hearts content, we may blazon our annoyance, and fill the world with our dismal complaints, but as night follows day, with the same orderly and unflinching sequence will come deception and surprise for our implicit faith in schemes which carry upon their face absurdity, dissimulation, and fraud. There are always men waiting to tickle the ears of their fellows with the tale of delusive hope; they are the spiders of humanity, who hide their lurking places and depraved minds by the gossamer tinsel of deceptive wealth. They live by their wits, and prey upon the pecuniary selfishness of mortals. Perhaps there never was a time so marked for the growth and number of foolish enterprises; and true to our past reputation and characteristics we still retain an intense

desire to acquire property which is situated at the furthest distance from our supervision; hence it is that foreign mines, requiring immense capital for their development and prosecution, find a ready and willing public; whilst mines under our noses, with considerable chances of success, and requiring but comparatively little outlay, remain unheeded, or are allowed to fall into the hands of company floaters. We have been curious enough recently to estimate roughly the amount of capital expended in British and foreign mines. Let the figures speak for themselves.

Total capital expended in foreign mines 5,837,872*l.*, and this in 61 mines, making an average for each of 139,965*l.* Out of this number three only have paid a dividend.

The total capital spent in English mines is 4,696,017*l.* This makes an average cost for 244 mines of 19,278*l.* Twelve of this number have paid dividends.

When we compare the dividend mines in this country with those of abroad the same results are shown. Thus, 83 English mines have paid dividends to the amount of 5,015,711*l.*, or an average of 612,478*l.*; and 32 foreign mines have paid 1,576,314*l.*, or an average of 428,000*l.* These figures are quoted from the *Mining Journal* up to a recent date in November, 1872. We should have liked to select particular districts, as a further exemplification of the truths we desire to impress upon the public, but we fear we have already trespassed upon your space for the insertion of these remarks; but we cannot conclude without again reiterating the opinion that much of the evil and uncertainty connected with mining is self-imposed by the indifference and disregard we pay to the common and trivial conditions which ensure success.

E. H.

ROSEWARNE CONSOLS IN THE STANNARIES COURT.

SIR.—Were the world not wrinkled into mature civilisation, as it is, the application of the ever-to-be-remembered "thumb-screws" of inquisitorial celebrity would have long since solved the mystery in which this case is involved. But why reflect on those persuasive powers possessed by our ancestors, whose adaptation of means to ends was peremptorily put in force, and seldom failed to extract, particularly in official spheres, responses to their enquiries? It is sufficient for the evil of our day to moot the subject by the mild postulate as to whether the sharp-witted British public will any longer tolerate, and at the same time pay the piper, those "bonnie rigs" to which the worthies of the Stannaries Court are in the habit of capering. The following queries will point the moral:—What was the total amount of debts of the above company when it was put into liquidation? What the amount received from the sale of machinery? To whose credit such sum was paid, and when and where? Further, would it be too much to ask if there be a file of proceedings kept in the Stannaries Court with the, of course unimportant, accessories of date, and so forth? Finally, is this ordinary medium of information for one and all prescribed by Royal Charter open to the inspection of enterprising mortals of the present period? I fear much, however, that enlightenment in this direction will be distinguished by its absence, but allow me to hope some of your readers will be able to supply a few reflections to guide—

AN UNFORTUNATE SHAREHOLDER.

SOUTH CARN BREA MINING COMPANY.

SIR.—I am not surprised at the remarks I read of "One Kept in the Dark," in the Supplement to last week's *Journal*, and am rather amused at the easy-going way of the London shareholders of allowing themselves to be kept in the dark. You will not find a Remyth man like that—they are like "the early bird that picks the worm." I was a shareholder in South Carn Brea at the commencement, and was well acquainted with the promoter, the late Capt. J. Lyle, and remember his saying to me that he believed it would be one of the best mines he ever saw; and he gave me his reasons; and from the present appearances of the main lodes, as well as the local reports I have gained from working men, Capt. Lyle is likely to be correct in the opinion he so long ago formed, in 1854. "It will take not far from 20 years," says Capt. J. Lyle, "before it will do much." As usual, Londoners have laid out large sums of money in bringing it to the present advantageous position, and I think it is only fair that they should have a share in any triumph. Cornish men I know are able to work the "ore" for themselves, and when they get things in "case" at South Carn Brea it will be done there, then it will be "Hurra to us, boys." Cornish gentlemen in the neighbourhood of Redruth, Truro, and other parts adjacent to the mine are quietly increasing their holdings. From observation and information I have had on the spot from working men whom I have known for years, I make bold to say to the present shareholders, wherever they are, "Hold on, if you can, notwithstanding you may have a small call to pay at the next meeting; don't let that frighten you into selling your shares."

Now then I take a run down to Cornwall, and have a pipe, &c., with some old fellow-workers of mine, who are not yet captains, although some of them ought to be from the practical knowledge they possess. Well, like the rest of Cousin Jackies, we have a chat in a social way, and amongst other things about the lode, and how it is this and the other one looking "old boy?" and if you happen to know a keen old dog who wins his eye over a pint, and have a little patience with his style of imparting information, you can pick up a good deal if you know what questions to put. On a visit I have lately paid to the mining district of Redruth I find that it would be wise for all who are interested in Buller, West Basset, South Carn Brea, or West France to hold on.

There are a good many who are in the dark I find in these mines, more than the miners when their candles are out, and that they will discover to their chagrin before the end of 1873, unless I am very much mistaken. I am no broker, nor do I wish to be one, there are too many of a sort already, and about Redruth they are of all shades, trades, and denominations. Shareholders should insist on having full and accurate information published in the *Mining Journal* weekly; and I think if you will urge this in your columns we shall not be long before the number in the dark will be very much less than now.

I say fair play for all, that is our country motto, and I hope it will never be sullied. I have no other reason in now addressing you but a sincere desire to see all who adventure in Cornish mines willing to come forth again after having had luck, saying—"Well, the agents wrote and told the truth to the shareholders, like honest men, and I'll try my luck again."

ONE WHO HAS LOST AND GAINED BY MINING.

THE GEM TIN MINE.

SIR.—This valuable mine, which is situated near the Grenofen Viaduct of the Tavistock Railway, is opening up well. The stopes in the back of the deep adit level, on the south lode, are worth on an average 30*l.* per fathom; rocks now being broken from the lode weighing from 2 to 3 cwt., containing one-half tin. The north lode also is a very valuable lode, worth for tin from 15*l.* to 20*l.* per fathom; and as the drainage of both these lodes is continued east towards the great main course the more productive they are. The 20 east and the stope in this level will average also 30*l.* per fathom. The engine-shaft is now sunk to a 30 ft. level, the drainage both east and west will commence at once, and a splendid course of tin is expected. I am informed that 3000*l.* worth of tin was sold last year, and that the returns this year are expected to pay a profit of at least 50 per cent. on the outlay. No tin mine in Devon or East Cornwall is equal to this mine. There are 14 heads of stamps working day and night, with an abundant supply of water from the River Walkham all the year round. I noticed one of Collom's Patent Buddies on the floor; a very great advantage in the dressing department. I congratulate the adventurers in this very valuable mine.—*Jan. 15.*

TOURIST.

NORTH AMERICA GOLD MINING COMPANY.

SIR.—It is, I believe, the invariable custom, previous to the annual general meeting, for the directors of a company to send with their own report to the shareholders the annual report of the manager or agent, showing in detail, in the case of a mining company, the work done during the year, and the cost of it, the number of men employed, the expenditure for materials, stores, &c., and his opinion of the future prospects of the property. It is also the duty of the directors in their first annual report after taking possession of the property to give the shareholders full information in respect of it, whether the shares have all been allotted, the property paid for, and the proportion in cash and in fully-paid shares, the validity of the title, and all other particulars which at that stage of the company's progress the shareholders have a right to know.

Directors omitting to afford this information would, I am confident, be universally held to have failed in their duty in very important points, and to have treated their shareholders in a way that no one would justify or excuse; yet such has been the conduct of the directors of the North America Gold Mining Company to their shareholders, for they have neither sent us the annual report of the manager of the mines, nor have they in their own report made the slightest allusion to the amount of the capital subscribed, the validity of the title, the payment for the mines, nor to anything, in short, which the shareholders are as much entitled to know as their paid trustees—the directors.

It may be supposed, however, that the information thus irregularly (though I admit consistently) withheld by the directors was supplied at the meeting by the gentleman who had just returned from the mines with a favourable report, and been made Chairman (in the room of Mr. McCulloch Torrens, M.P., resigned). I have carefully read that gentleman's statement at the meeting, and it amounts to this, that he visited the mines with two friends, and saw three pieces of gold taken from the breast works, obtaining from three samples of the gravel of 50 to 60*l.* each, 3/4 oz., 1 oz., and 1 1/2 oz. of gold; that he entered the lower tunnel where there is a large space of ground to work on, but no miners to work it, and that "Mr. Morgan had greatly improved his stores, which were in admirable order." "These (to use Dr. Stallard's own words) are the material facts we had to place before the meeting" as the result of his visit to the mines, and it is hardly necessary to say that they do not supply any of the important information which is wanting in the directors' report, but which is most of it doubtless contained in Mr. Morgan's annual report, which the directors, with characteristic reserve, have not sent us. Dr. Stallard tells us that his visit to the mine had the result of largely increasing his holding in it, and that one of his friends had since become a shareholder. As, however, the public confidence has of late been much shaken, especially by a recent case in which it was affirmed in a Court of Justice that the directors of a company had presented with their qualification shares paid for with the shareholders' money, it

might perhaps have been as well (although of course superfluous in this instance) as tending to restore that confidence, had Dr. Stallard incidentally mentioned that he or his friend had paid for their new holdings the full price of 4*l.* per share. Besides, if the circumstances of these two gentlemen having increased their pecuniary interest in the mines be accepted as a proof of their faith therein, in what light can we view the fact that Mr. Morgan, a mining engineer, a practical miner, and manager of the mines, does not hold a single share in them, nor any one at the mines, or in California? Mr. Morgan, we are further told, has run the tunnel 3000 feet, and put in a siding 1700 feet since (we are left to infer) he assumed the management of the mines in March last. As it has taken Mr. McLean, the energetic and skilful manager of Sweetland Creek Mine, nearly two years to run a tunnel 2000 feet, there is either a great difference in the conditions of the ground tunneled in the two mines above named, or the North America tunnel referred to by Dr. Stallard includes the 2000 feet of the tunnel, or the 2000 feet new tunnel tunneled by Mr. Morgan and Mr. McLean in their reports as "completed" months, nay years, before the North America became the property of the present company. According to Mr. Morgan's statement in his report for 1870 the yard of the old tunnel was capable of holding 75,000 carloads, and the yard of the new tunnel 60,000 loads of gravel. Dr. Stallard now informs us that there are only 30,000 carloads on the dump, yet that when Mr. Morgan was instructed by the board to keep the gravel he had purchased separate from that he might bring out, he was quite unable to bring out any gravel, because it would have covered up what was already on the dump, so that apparently by some unexplained process the yard has marvellously decreased in size since the date of Mr. Morgan's report of 1870.

Our Chairman also tells us that "the mine is well stored," and that "this explains an item in the accounts which it would have been better if it had been a little more fully explained in the directors' report." Dr. Stallard, to be accurate, should have said that it is not explained at all, or even alluded to in the report. It merely appears in the balance-sheet thus: "Superintendent of mines, 9019*l.* 2s.", without any note or comment whatever, or even date. Dr. Stallard's own explanation of the item is that on arriving at the mines he found Mr. Morgan moneyless, that "he had borrowed \$2000, and mortgaged everything," that on this he (Dr. Stallard) wrote to the directors to send out as much as they could spare of the working capital, and that at once sent him out 9000*l.* (\$45,000), and this a few weeks only after he made a profit, as shown by his accounts, of 1200*l.* (\$6000). But we are told that the 245,000 will be recouped by the 30,000 carloads of gravel on the dump, valued at 80,000, and the 13,000 to 15,000 to be realised from gravel contract of last year, and the tailings in that case, however, after paying expenses at the mines estimated by Dr. Stallard at 6000*l.* to 7000*l.* for three months' labour alone, and of the London office, which are heavy (the directors having already divided among themselves 500,000*l.*), the mines were only taken possession of in March last, and have paid nothing, there will remain but a small balance for dividends on a capital of 70,000*l.*, and from the nature of the mines there can be no second dividend this year, but more probably a demand on the shareholders to provide another 9000*l.* to pay, as in last year, for labour and stores. There are stated to be 30,000 carloads on the dump, and we can wash, says Dr. Stallard, 4000 loads a-day; at this rate it will take eight days to wash the whole of last year's output, when the production of the promised bar of gold a day will doubtless terminate.

There are several other points to remark, but I hope we shall soon see the last of the mystery and mystification which our directors have practised since they undertook the management of our property. Let them no longer suppress, but publish as the bona fide American mining companies—the Emma, Flagstaff, Sweetland Creek, and others do—the weekly reports of the manager at the mines. We shall then have some idea of what is being done there, and when, if ever, there is a prospect of getting any return for his money, by—

A SHAREHOLDER IN NORTH AMERICA.

EMMA MINING COMPANY.

SIR.—Will our directors kindly reply to the following queries?

- 1.—How is it that our Chairman, after having visited the mine with the avowed object of "thoroughly investigating its affairs, financially and otherwise," did not in his official report to the shareholders refer in the most distant manner to the impossibility of continuing the payment of monthly dividends?
- 2.—How is it that the very next month following the expiration of the period during which the vendors guaranteed the 18 per cent. "it was expedient," and for the "benefit of the shareholders," to propose "the payment of quarterly dividends?"
- 3.—How is it that in the official circular in December last the directors informed us that "the returns were yielding profits largely in excess of the amount necessary to pay the monthly dividends," and that in the official circular of Jan. 15, we are informed that "they are disappointed in their expectation of being able to declare a dividend for the month of February, as since the circular of Dec. 20 the three weekly outputs have fallen to 180, 150, and 170 tons, without any mention of rich ore—productions so small as to preclude the possibility of paying the dividend?"
- 4.—What was the practical value of our Chairman's "personal examination" into our affairs, if he either did not discover, or if he discovered did not disclose, that fact that the payment of the January and February (and it seems likely also the March) dividends of 1873 would not be paid, "owing to the continuance of the mine" in the spring of 1872?
- 5.—Has another "now slide taken place, which is the real cause of the seriously diminished weekly outputs since Dec. 20, for we have not yet forgotten that about this time last year we were told, what is now repeated, that "in answer to repeated telegrams" the explanation is not satisfactory, and requires investigation?"

A satisfactory solution of these queries would appease much anxiety, and set at rest that many-tongued monster—rumour.

A SHAREHOLDER.

Glasgow, Jan. 16.

[For remainder of Original Correspondence see to-day's Journal.]

GOLD HUNTING IN COLUMBIA (U.S.)

A CALIFORNIAN IN SOUTH AMERICA—ADVENTURES IN SEARCH OF GOLD—DISCOVERIES OF NEW PLACES.

Some of our readers may remember that in 1866 a number of Californians were lured to Barbacoas, on the western coast of Columbia, by the reports of the existence there of rich placer mines, which could be cheaply worked with native labour. The mines were there, sure enough, formed by the washings of the Cordillera streams for ages; but the owners asked for one-half the product, the climate was sickly, and our adventurers, generally without means, finally abandoned the country in disgust. One of the few who remained was Dr. James Weaver, an old Californian, who had been a pioneer miner and ditch builder in Nevada and Yuba counties, where a mining canal still bears his name, and who will be widely remembered when we recall his name, both in this State and Nevada. Weaver left the coast, pushed into the interior of the province of Cauca, which is in the south-western extremity of Columbia, and prospected high up in one of the Andean ridges, where he had to cut a trail and made his way with great hardship. On the banks of the River Aguacaria, whose name indicates its auriferous richness, he found gold wherever he washed the gravel. After many vicissitudes he established himself in this lonely country in a hut with a few Indians. But his Indians deserted him, and he was obliged to quit Aguacaria. At Yaculo, however, in another part of Cauca, 30 miles from Barbacoas, he found extensive placer deposits, similar to the hydraulic mines of California, where one Pablo Rinel, with men, women, and children, Indian and negro, was taking out considerable gold by means of ground sluicing, water being plentiful for the purpose, and rain falling often enough to keep the ground constantly in a good condition for washing. Weaver saw Rinel's people wash up 40 lbs. of gold, weighed with the steel-yard, at 10 o'clock, to the pound. He found the mining country consisting of high gravel ridges divided by many ravines and streams, to be very extensive, and admirably adapted for hydraulic operations. Rinel owned 30 square leagues, which he offered to sell for \$200,000, and all of it, says Weaver, is regular mining ground. The Yaculo diggings are known to very few people, and Rinel is the only one who has tried to work them largely. The negro women make spending money easily by washing in the ravines. The county is very sparsely inhabited. The land, when owned by individuals, is held by title descended from the King of Spain. The laws allow one man a league of mining ground when found vacant, and much of it is vacant and unexplored. Dr. Weaver was so pleased with the Yaculo country that he has come to San Francisco to obtain the implements and machinery necessary to hydraulic mining, and means to return there to work some land he has secured. He says labour can be obtained for 20 cents a day, that there is no malaria, and that the climate is good, the people (mostly Spanish and Indians) are friendly, and edible of all kinds very cheap. But he says it is no country for poor men. Without money and implements to work the ground systematically on a large scale Americans would starve there. The Panama *Star* and *Herald* editorially endorse Weaver's statements concerning the gold regions of Columbia, which are important outside of Cauca, and prints a long letter from him, describing that interesting wild country and his adventures—which smack of Californian 1849 experience. But as Weaver says, it is certainly no country for poor men.—*San Francisco Bulletin.*

AMERICAN MINES.—A report recently made by Mr. Pakenham, Her Majesty's Secretary of Legation at Washington, and transmitted to the Foreign Office, states the following facts, as showing the astonishing progress being made by the United States, in spite of the loss of their ocean commerce, and the prostration of their shipping interests:—"The wealth of the Union in 1870 was \$30,068,488,507, against \$16,159,616,068 in the year 1860, and \$7,135,780,288 in 1850, so that notwithstanding the exhaustion consequent upon the four years' war, and the loss of \$2,000,000 property in slaves, the increase in the last 10 years is rather over 80 per cent. The 13 leading mines on the Comstock lode alone have produced in bulk, from 1851 to August, 1871, \$84,355,962, and this, too, notwithstanding very wasteful and careless mining, now being partly corrected. I believe it has been estimated by competent judges that there now accumulates during the winter months, in the various Western mines of precious metals an amount equal to \$10,000,000, which during the spring and early summer finds its way east to be shipped abroad. Even the Llano Estacado, a barren steppe, destitute of water, and long the terror of travellers to the Pacific, has lately been discovered to be rich in mineral wealth. The daily average production of petroleum in the United States in 1871 was about 18,100 barrels, against 17,900 in 1870, while fresh impetus is likely to be given to it in some of the Western States by its proved adaptability to the smelting of iron ores, which is already becoming an important industry in the West. The unlimited deposits of the iron mountains and the knobs of the Ozarks, their proximity to the coal beds of the Prairie State, the abundant brown and red oxides of the State of Missouri, the inexhaustible limonites of the sub-carboniferous and the carbonates of the coal measures of Western Kentucky, all promise to make Belmont, Cairo, St. Louis, Cosmoletto, Grand Tower, Paducah, Evansville, and other places, great interior centres of an iron trade booming up in the possibly not very distant future. In Alabama a late geological survey estimates the coal fields of Warrior, Cahawba, and Coosa, at 5500 square miles, with about 10,000,000,000 tons of coal to the square mile; the accompanying iron ores are red and brown hematite, blackband, and fossiliferous. The quantity and quality of these ores, their proximity to both coal and fluxes, and the low rate of transport to the sea at Mobile, are considerations well calculated to attract foreign, and especially British, enterprise in these regions, and that in spite of present political drawbacks.

EMMA.—Those who have been there (says the Salt Lake *Mining Journal* of Dec. 12) say that the props in Emma Mine are not sufficient, and that it is likely to cave in again when the ground dampens in the spring. Another strike

of a rich vein of carbonate ore has been made, which assays way up in the hundreds and which can be easily worked. There are thousands of dollars worth of second-class ore lying on the floor.—*San Francisco Weekly Stock Report*, Dec. 20.

THE SILBER LIGHT.

During the past two years numerous articles have been published in the *Mining Journal* recording the progress made by Mr. A. M. SILBER in perfecting and introducing his very ingenious inventions connected with the burning of oil for illuminating purposes, the merits of which have now been so extensively recognised that the very general adoption of the Silber light for railway, lighthouse, shipping, and many other purposes, besides those of village, country mansion, and domestic illumination, to which it was at first considered particularly applicable, is now beyond question. The mere fact that Mr. Silber has so thoroughly succeeded in producing a lamp which, even in point of actual cost, can successfully compete with gas at 3*l.* 9*d.* per 1000 cubic feet, would alone bring the invention largely into favour; and the invention has the still further recommendation that the care and trouble invariably experienced when illuminating oils are burned in the usual way are entirely avoided, the safety of the light being admittedly such as to leave nothing to be desired.

The commercial value of Mr. Silber's inventions having now been as completely demonstrated as the scientific skill displayed in connection with them, an influential company—THE SILBER LIGHT COMPANY—has been incorporated with limited liability, and a capital of 120,000*l.* in shares of 10*l.* each, for the purpose of purchasing the inventor's British patent rights and fully developing the trade to which the inventions cannot fail to give rise. We have already noticed that carriages had not been fitted with the new light for the Metropolitan, the Great Eastern, the North London, the London, Chatham and Dover, and the Great Western Railway Companies, and as these have now had from 6 to 12 months' experience with the lamps, they have had sufficient time to judge of their merits. The reports are without exception satisfactory, the economy and cleanliness of the lamps being alike remarkable. The certificate of Mr. Myles Fenton, the general manager of the Metropolitan Railway, will suffice as a sample of the whole. He states that the Silber lamps which "have been fitted in one of their trains for about nine months have proved very satisfactory. Perfect lighting is essential on this line, and their experience, so far, has proved that the Silber lamps are the best that they have used both as regards illuminating power and economy," and as concerns the illuminating power, Mr. Fenton's opinion will be readily confirmed by all who have travelled on the line in carriages illuminated on the two systems, for the difference is too striking to escape notice. But perhaps the best evidence that the value of the invention is appreciated by the railway companies which have tested it is that afforded by the fact that orders are now on hand for further supplies.

From the brilliancy and reliability of the Silber light, its adaptability to lighthouse and shipping purposes soon became apparent, and the most favourable anticipations were realised when practical trials were made. His recently completed models for ship-lamps were submitted at the recent competition at Shoeburyness under the direction of the Marine Department of the Board of Trade, and his masthead light, burning colza and mineral sperm, of which the flashing point was 450° Fahr., proved the best. Earle's Shipbuilding Company have been supplied with starboard, port, and masthead lights, for Lord Alfred Paget's yacht, and after giving them a trial, his lordship has written complimenting Mr. Silber on the great success obtained, and giving his opinion that "no ship ought to be without them."

The prospectus of the company does not appear to contain any estimate of profit, which is, no doubt, wise, for in companies engaged in working patented inventions the probable profits can scarcely be guessed at, but it will be fresh in the memory of many that only a few months since a patented invention company was formed, and in the course of a few weeks a sale was effected which permitted the return, by way of dividend, of the entire subscribed capital, leaving the business intact, and promising annual dividends almost equally large. In the present case the terms upon which the purchase is made by the company are to a great extent contingent upon profits; he is to receive 25,000*l.* in cash (15,000*l.* on completion of purchase, and 10,000*l.* three months after allotment), and 40,000*l.* in fully-paid shares, not entitled to dividend until after the shareholders have received 10 per cent. dividend, and carried 5000*l.* to the reserve fund annually. Three-fourths of the vendor's shares cannot be sold for two years, and when 10 per cent. per annum dividend has been paid for two consecutive years deferred and ordinary shares rank equal. The subscribing shareholders are thus fully protected.

But, perhaps, the most important feature in judging of the prospects of the concern is the summary of the merits of the invention by Mr. William Valentín, F.C.S., the Principal Demonstrator of Practical Chemistry at the Royal College of Chemistry, who, having been constantly consulted by different parties professionally from the time that the invention was first patented, must understand it almost as perfectly as the inventor himself. Amongst the advantages which he points out, and to which the public will attach particular importance, are the perfect safety of the lamps from risks of explosion, the regulation of the admission of air to the flame in such proportions as to produce the most advantageous combustion by means of air currents thrown into the centre and around the flame, and the production of a light from mineral oils 40 to 50 per cent. cheaper than the same light from coal gas costing 3*l.* 9*d.* per 1000 cubic feet. Mr. Silber has constructed his lamps to correspond with all the principal forms of gas lights in general use, and thus secures not only all the facilities for illuminating hitherto supposed to be possessed by gas only, but also the cleanliness and much more than the economy of gas in its application to heating and cooking purposes, with the almost inestimable advantage of the portability of oil. Mr. Silber's cooking apparatus, whether for domestic or military purposes, will become even more extensively known than his lamps, though both are destined to occupy a prominent position in the world of inventive industry.

NEW BLASTING POWDER.—A number of interesting experiments were made with Pudrolythe at the Cauldron Low Limestone Quarries, North Staffordshire, on Saturday. These quarries are situated in the wildest and most secluded part of the Staffordshire Moorlands, and are reached from the Churnet Valley Railway Station by an incline 3 miles long, and running for a large portion of that distance at a gradient of 1 in 12. The working face of the quarry consists of an imposing escarpment, more than a 1/2 of a mile across, and varying in height from 100 ft. to 150 ft. The North Staffordshire Railway Company are the proprietors, and they supply annually to the ironmasters of both extremities of the country, for fluxing purposes, nearly a quarter of a million of tons. The visitors on Saturday included the Duke of Sutherland, Lord Talbot, Mr. Percy Morris, general manager of the North Staffordshire Railway; Mr. T. W. Dods, Mr. C. Lockhart, and Mr. E. Pamphill, heads of departments; Mr. F. Bishop and Mr. C. J. Homer, Chairman and managing director of the Chatterley Iron Company; Mr. W. O. Savin, of Oswestry, and Mr. H. E. Taylor, of London, directors of the Patent Safety Blasting Powder Company, who are the patentees of pudrolythe; Mr. J. J. R. Poch, son of the inventor, &c. On the arrival of the company a shot was fired. This shot consisted of 2700 lbs. of ordinary gunpowder deposited in a chamber excavated in the rock more than 30 ft. from the face. The explosion brought down about 10,000 tons of limestone, and left besides several enormous masses apparently tottering and ready to fall. Shots of this power are fired about once a month, and in the present excited state of the iron trade the quantity thus obtained is insufficient to meet the demand. After this the experiments with pudrolythe were proceeded with. A hole 3 ft. deep and 1 in. in diameter was driven into the floor of a terrace of rock, and 3 ft. 8 in. from the perpendicular face. A charge of 19 in. of pudrolythe was fired, with the result that the rock, though not blown out, was fractured in all directions, cracks extending across the face to the breadth of 18 ft. 6 in., and 7 ft. downwards. The lifting force was next tried. A hole 2 ft. 8 in. deep and 1 in. in diameter was driven into the base of a terrace, and charged with 15 in. of pudrolythe. This raised and shattered into many pieces a mass weighing about 8 tons. Five inches of ordinary blasting powder were then inserted in the centre of a loose block of limestone weighing between 7 and 8 tons. The hole was 1 inch in diameter and 18 in. deep. The mass was broken to pieces. Two masses, each weighing about 3 tons, were then charged, one with 1 1/2 in. of ordinary powder, and the other with 1 1/2 in. of pudrolythe. The stone containing the powder was blown to pieces, while the charge of pudrolythe, owing to imperfect tamping, did not explode. By this time the workmen had allowed it to appear that in the matter of blasting-powder they were staunch conservatives, and the failure of the pudrolythe in this case, though merely going off with a fizz, was received with derisive laughter. Two other lifting experiments were then made with the pudrolythe, and they were quite successful, but not more successful, the quartermen said, than gunpowder would have been. The non-explosive nature of the new substance when not confined was then demonstrated. Small heaps were placed upon the ground, and it was found that

these could not be lighted with the flame of a lucifer match, but it was necessary to thrust into the heap a lighter. It was burnt away slowly, like very damp gunpowder. A quantity of the powder was afterwards placed upon an anvil and beaten with a sledge-hammer, but it did not explode. The finest experiment of this kind, however, was that which closed the trials. A large fire was made in an iron stand, and in the midst of the fire was placed a deal box containing 25 lbs. of pudrolyte. At the end of 10 minutes the fire reached the pudrolyte, and it blazed up suddenly, but with so little of explosive force that the deal box, although burnt to a mere shell, retained its original shape. The experts present were divided in opinion as to the merits of pudrolyte for the blasting purposes. In this respect it had not shown itself to possess a very decided superiority to ordinary powder, but its advocates contended that the trials had been made under unfavourable conditions. It was generally admitted that its safety from explosion by accidental ignition or concussion had been established, and its superiority for mining purposes was shown in so far that it gives out very little smoke, and by the general absence of flame on explosion would greatly reduce the liability to the ignition of inflammable gases.

Meetings of Public Companies.

MEETING OF THE HONDURAS BONDHOLDERS.

A meeting of the Honduras Bondholders was called by Captain Bedford Pim, R.N., the Special Commissioner of Honduras, to be held on Jan. 6, but on account of the illness of Capt. Pim, it was postponed to Jan. 10, at 2.30 p.m., at the London Tavern, Bishopsgate-street, where a crowded and important assemblage of the bondholders took place. The gallant Captain, we were happy to see, was so far recovered as to be able to take the chair exactly at the appointed time, and gave the meeting the very clear statement we now publish in full detail.

Capt. BEDFORD PIM, upon entering the room, was received with cheers, and after taking the chair, proceeded to deliver the following speech:—

GENTLEMEN,—I appear before you to-day to give an account of my stewardship as Special Commissioner of Honduras, and in order to make my statement as clear as possible to everyone, I shall divide what I have to say into two parts: the first comprising an account of the present actual position of Honduras and the bondholders, and the second, my individual participation in the events which have happened since our meeting in the summer of last year.

I can safely say that my bitter disappointment and grief at having to announce to you that neither coupon nor drawing is at present forthcoming is not second to that of any bondholder present, but that this misfortune has arisen in a manner nobody could have foreseen will be abundantly proved to you presently.

The only comfort I can give you at present is the assurance that he has never entered the heads of those in authority in Honduras to repudiate their National Debt: on the contrary, I can assert, without fear of contradiction, that every exertion has been made to fulfil the financial obligations of the State, and complete the Inter-Oceanic Railway, upon which the hopes of both natives and bondholders are so intimately bound up. I firmly believe that every penny of the indebtedness of Honduras will be discharged if only time is given, and if I did not so believe I would not retain the appointment of Special Commissioner for one single moment; and here I feel it my duty to you, in proof of what I have just said, to inform you that all the loans have been raised for the sole purpose of building the Inter-Oceanic Railway, and that, so far as I can understand figures, the Government of Honduras positively has paid only the very smallest percentage of those loans for any other purpose but the railway from 1867 to the present day, a period of five years. If anyone wants a better proof of the singleness of purpose and honesty of the Honduras Government, I can only say he is very unreasonable.

Gentlemen, I have received letters without number from bondholders: I have not answered any of them, because I felt that I owed a duty to the general body, and not to individuals. Verbally, I have spared no pains during the last six months to afford every information to enquiring bondholders who have waited on me personally. I make this statement because I should be very sorry if any bondholder thought me unfeeling because I did not answer his letter. These letters from bondholders contain every sort of question bearing upon the matter now before us which it is possible to conceive, and I think it will, perhaps, be the wisest course for me to adopt if I take those questions *seriatim*, and give a reply to each.

I need not say that if anyone has any other questions relevant to Honduras to ask I shall gladly answer them.

The following are the questions which I refer to:—
1.—Question: Is there any authority that the money of bondholders has been expended with judgment and due economy?—Answer: The money has been expended in the only possible way, viz.—

1.—In prosecuting the railway works so far as the internal dissensions of the country would permit.

2.—In providing the coupons and drawing of the bondholders.

3.—Question: Supposing the present Government to be upset, is there any succeeding Government likely to repudiate the existing debts, or to fail to pay dividends punctually?—Answer: Repudiation under any circumstances is most unlikely, as is proved by the consistent desire on the part of those in power, of all shades of politics, to finish the Inter-Oceanic Railway.

4.—Question: Supposing there is money enough, and no political interruption, when do you expect the railway finished?—Answer: Within about two years.

5.—Question: Is there enough money to finish the railway?—Answer: Certainly not.

6.—Question: Are you a bondholder yourself?—Answer: Certainly not. I have never held a bond, and never made or lost a single shilling in Honduras stock. 7.—Question: Is there a prospect of peace in the country?—Answer: There is a fair prospect of peace in the country; but upon this point Dr. Bernhard, a commissioner, who has arrived within the last few days from Honduras, will be able to give you the latest information.

8.—Question: What has become of the difference between the amount realised on the sale of the bonds and the actual amount paid to the contractors for the railway?—Answer: I am sorry to say that the money referred to has been paid away in drawings and coupons, instead of being devoted to the purposes of the railway, during the various internal revolutions and the war between Salvador and Guatemala against Honduras.

9.—Question: What amount of money has been paid to the contractors of the railway on account of works?—Answer: Not very far from one million of pounds sterling.

10.—Question: What amount of money has been spent actually in providing interest and sinking-fund for the bondholders?—Answer: Close upon two millions sterling.

11.—Question: What amount of mahogany or silver ore has ever been imported into this country in accordance with the prospectuses?—Answer: The mahogany and silver ore were actually exported from Honduras at a loss, for the simple reason that the distracted state of the country rendered the bringing of each product to market so much more expensive than formerly, owing to the almost total absence of labour.

12.—Question: Is it true that many formidable engineering difficulties will be met with on the second and third sections of the line of railway?—Answer: I cannot answer this positively from my own experience, because I have not examined the line practically; but every authority who has done so agrees that the remaining portion of the railway can be constructed within a reasonable time without meeting more than the ordinary engineering difficulties.

13.—Question: From your great and extended experience of Central America, do you think that, when the railway is finished, it will be as paying a concern as the Panama Railway?—Answer: So far as I am concerned, I am decidedly of opinion that the Honduras Inter-Oceanic Railway will prove a much better permanent investment than the Panama Railway itself; and I am strongly confirmed in this opinion by my friend, Mr. George B. Kerford, Consul of Honduras at Liverpool, whose experience of more than a century of a century of the commerce of Spanish America renders his opinion peculiarly trustworthy and valuable.

The questions comprise the path of the enquiries made of me from time to time; but I repeat that, should any gentleman present wish to ask any further questions every opportunity will be afforded him. I want, however, to point out that, after an experience of six months of careful enquiries and consideration into the affairs of Honduras, I have convinced myself that no enterprise such as the Inter-Oceanic Railway has ever met with such a series of unfortunate and absolutely unforeseen drawbacks as this has, and that this is the real, sole, and only cause of the disappointment of those I now see around me—a cause which will be removed by the continuance of peace in Honduras, on which the commissioner direct from Honduras will shortly give you his views. I think I also ought to draw your attention to this fact, that the operations in Europe of financing the various loans have been rendered more than usually difficult and expensive by the occurrence of no less than two wars almost within that period, to say nothing of the financial panic of 1866, all of which made it peculiarly difficult to raise the necessary funds; and then, when the funds with great difficulty were obtained, the greater portion has been swallowed up in paying interest and drawings, instead of being devoted to the railway, simply because the internal discord of the Republic put a summary stop to public works.

And now, gentlemen, the painful task devolves upon me of detailing to you, in the most succinct manner, the events which have occurred since my meeting you in this same room in the summer of last year. I will not enlarge upon the strenuous exertions which I have made to arrange financially for meeting the obligations of Honduras and completing the Inter-Oceanic Railway.

I do not take any credit, but I feel proud to state to you that I have been over to the Continent no less than 10 times on your business, and that after great trouble and anxiety, it was finally arranged to issue a loan in France, from the proceeds of which the coupon and drawing might be paid, and the works of the Inter-Oceanic Railway be vigorously prosecuted. The arrangements, under the best auspices which could be obtained in Paris, were completed, the necessary formalities with the French Government were concluded, and the loan brought out in Paris and the provinces at very great expense, and as was afterwards proved, with a success which exceeded the most sanguine anticipations. But the well-founded hopes which I ventured to express to you in my circular of Dec. 12 last were not destined to be realised. Monsieur Victor Herran, Minister Plenipotentiary of Honduras in Paris, and his son-in-law, Monsieur Eugene Pelletier, Consul-General of Honduras in Paris, from motives the baseness of which I will not condescend to enlarge upon, having failed to extend from me through the Honduras bankers in Paris the sum of 40,000*l.*, and 16,000*l.* respectively, laid an information before the French authorities that I had falsified the title of Special Commissioner, and intended to swindle the French public out of the proceeds of the loan.

These assertions, however transparently ridiculous, had upon me a most serious effect. I was summarily arrested at my hotel without the slightest intimation upon what grounds, lodged in the cells like a common felon, dragged before the judge twice with a chain round my wrist, and incarcerated for 48 hours under circumstances which I disdain to excite your feelings by narrating. I will not enlarge upon what I had to endure; but, fortunately, documents seized by the police testified to the baseness of the cowardly and deliberate falsehood of Messrs. Herran and Pelletier. Gentlemen, it is my duty to tell you that two more consummate scoundrels it has never been my misfortune to meet with. You will hardly believe that when the Commissioner of Honduras (Dr. Bernhard) called upon Monsieur Victor Herran, on Dec. 27, and asked him where Capt. Bedford Pim could be found, that he replied Capt. Bedford Pim was in London, although he well knew that at that very moment, at his own instance, Capt. Bedford Pim was incarcerated in the

common cell of a French prison. Not only that, but as a proof that Messrs. Herran and Pelletier were both thoroughly cognisant of every step taken by Don Carlos Gutierrez, the Honduras Minister Plenipotentiary in London, the former, Mons. Herran, sent his son-in-law, M. Pelletier, to Brussels, to Don Carlos, who was at that time delivering his credentials from Guatemala to the King of the Belgians, when M. Pelletier, in the name of M. Herran, declared his entire approval of the steps taken, and after making himself master of the terms of the contract stated, in the presence of three witnesses, whose names are appended, that both himself and his father-in-law would give every possible support to the loan.

Before leaving the painful subject of the rascality of these two scoundrels I will quote the following extract from the declaration of M. Seegmann, financial agent of Honduras, on this subject.

This gentleman was arrested at the same time as myself, and, being a Bavarian, was possibly in a more dangerous position than myself, for Paris being still in a state of siege, legal security for person or property can scarcely yet be relied upon. After narrating the particulars of two or three visits paid to him (Mr. Seegmann) at the financial Agency of Honduras, since Dec. 16, he goes on to say:—

I learned nothing from M. Pelletier during the next day, Monday, 23d: only about half past five, P.M., M. Nouette Delorme gave me notice that he had been informed by M. Francois, Editor of the *Droit* newspaper, that a protest was to be inserted in his paper the next morning. In spite of my great repugnance, I thought it my duty to go to M. Pelletier, at his hotel at Passy, to demand explanations from him. M. Pelletier was not in, but Madame Pelletier in his absence thought she could assure me that her husband was a complete stranger to the fact I mentioned.

However, I waited nearly three-quarters of an hour for M. Pelletier, and just as I was going away, as seven o'clock struck, M. Pelletier came in, and, confirmed what his wife had said. Returning home at once, I found M. Nouette Delorme there again, who told me that he had been informed, and that in effect M. Francois had received his paper a protestation, of which he did not think it his duty to point out the authorship, but at the same time he had been told to await ulterior orders before inserting it. I immediately returned to M. Pelletier, to correct the too great positiveness of my former assertion. M. Pelletier received me most graciously, and repeated to me that he had nothing to do with what might have been done in the *Droit* newspaper; that he had no intention of acting in any way at the present moment, and that he would do nothing without giving me notice.

The next morning, Dec. 24, his protest appeared in the *Droit*. M. Pelletier, whilst the notary was at work on Dec. 26, tried to enter into conversation with me. I let him talk. He said to me among other things—

1.—This can do you no harm. We look on you as an intelligent, faithful treasurer-paymaster, and we are especially anxious that your work in the payment of the coupons should not be interrupted for a moment.

2.—It is lucky for you that the issue cannot take place just now. The Honduras Government would have suffered a disgraceful check, but we will take it up again in six months with every chance of certain success.

A certified copy of the lengthy document from which the above extracts have been taken has been laid before the Judge d'Instruction, M. Matthieu de Vienne.

I have now only to remark on the personal part of the subject, that every effort will be made to bring Messrs. Herran and Pelletier to justice. My case will be formally laid before the English Government: the French Government will be officially informed of the conduct of those persons who thus prostitute their diplomatic position to serve their own ends, and it remains to be seen if M. Thiers will ever again receive either of these men, while Don Carlos Gutierrez, my colleague, Mr. Kerford, as well as myself, have officially laid before the Government of Honduras all the facts, with the view to the immediate dismissal of the two men who have done all in their power to dishonour the country they so unworthily represent.

After their dismissal, and when no longer clothed with immunity by their official character, they will have to answer to me for their unmitigated rascality; and, in view of that event, I have already taken the necessary steps to prevent their escape, by employing detectives never to lose sight of either of them.

The letters of Mr. Kerford and myself to the Government of Honduras, and that of Don Carlos Gutierrez addressed to you, are herewith appended:—

[COPY.]
4, Westminster Chambers, London, S.W., Jan. 1, 1873.

EXCELLENCY,—I have the honour to inform your Excellency that after devoting my best energies as Special Commissioner of Honduras for the last six months to procuring the necessary funds to meet the obligations of Honduras, and complete the Inter-Oceanic Railway, and after a successful issue of a new loan in Paris, the proceeds of which were calculated to effect the immediate object in view, his Excellency Mons. Victor Herran, Minister Plenipotentiary of Honduras in Paris, assisted by his son-in-law, Mons. Eugene Pelletier, Consul-General of Honduras in Paris, caused such protestations and false informations to be laid before the French Government as to occasion the forcible withdrawal of the new loan, at the same time subjecting me to the treatment of a common felon. The motives for this base act are on a par with the baseness of the act itself, but by the enclosed documents your Excellency will be made aware of the dastardly means by which M. Herran and Pelletier endeavoured to accomplish their ends.

Fortunately, being well known, and holding a good position, the ambassador of England was soon able to satisfy the authorities of my *bona fides*. But I shall not at present trouble your Excellency with any details of the sufferings and indignity to which I have been subjected, but rather most earnestly draw your attention to the disastrous results which have arisen, and must ever arise, to the Government of your Excellency by retaining such unworthy representatives in Paris. In fact, as your respected representative in London, Don Carlos Gutierrez, will inform you, it is absolutely necessary that M. Herran and Pelletier be at once dismissed, in vindication of the honour of Honduras, rather than wait until the Government should be forced to do so.

As I have already said, I have never spoken to either of those persons since their dismissal. I think it my duty to inform your Excellency, without loss of time, of this occurrence, although I cannot enter fully into the details, as there is not time before the mail starts, but I shall lay the whole subject before your Excellency by the next mail.

As the Special Commissioner appointed by His Excellency Don Carlos Gutierrez on behalf of the Government to endeavour to restore the credit of Honduras, and relieve the Government of all its embarrassments, I feel bitterly that, at the very moment when success was assured, and without the slightest personal intimation from Messrs. Herran and Pelletier, I have been deprived of the only means of securing my life—their should have taken a step which must leave grave consequences behind it, and which certainly was not in the interests or for the benefit of the country they unfortunately represent.

BEDFORD C. T. PIM, Captain R.N., and Special Commissioner.

To His Excellency, the President of Honduras, Comayagua.

[COPY.]
London, Jan. 6, 1873.

DEAR SIR,—The Supreme Government of the Republic of Honduras will learn with pain and astonishment the cruel wrongs to which you have been subjected in Paris, in consequence of the acts of the Consul-General of that Republic in France, as you are well aware, for some time past I have endeavoured to secure the co-operation and to act conjointly in all Honduras matters with my colleague, Senor Don Victor Herran, Minister of the Republic in Paris. To this end, as you know, in the loan contract celebrated with you and Mr. George B. Kerford, the 3rd of December last, I stipulated that said contract should also be approved and signed by Mr. Herran, and requested you to see him immediately on the subject.

To secure Mr. Herran's co-operation, I wrote to him on Dec. 1 and Dec. 3 last, the private letters of which I enclose herewith correct translations.

Mr. Herran did not think proper to answer my letters in writing, but on Dec. 5 M. Eugene Pelletier, his son-in-law, and Consul-General of Honduras in Paris, called upon me at the Hotel Belle Vue, Brussels, where I was staying. There, and in the presence of the Rev. James Conolly, Clerk of the Catholic Church of "Our Lady," Kentish Town: of Mr. Frank A. Morris; and Mr. Charles F. Denny, he (?) informed me on the part of Mr. Herran that he (Mr. Herran) had received instructions from the Honduras Government to confine himself to diplomatic affairs, and not to mix himself in financial matters, and that in consequence of said instructions he could neither approve nor disapprove officially the above-mentioned contract. M. Pelletier, however, added on the part of Mr. Herran that he was willing to do his utmost in his extra-official capacity, both in Europe and in Honduras, to aid the success of these negotiations for the finishing of the Inter-Oceanic Railway, and fulfilling the Government's financial obligations.

M. Pelletier further added that Mr. Herran considered the steps we were about to take for the issue of the projected loan as the wisest course we could adopt in the present circumstances.

In answer to M. Pelletier, I said, "In view of your declarations, and of the support and aid offered by Mr. Herran, I will consent to sign the projected contract loan," and accordingly, and in his presence, affixed my signature to it.

With reference to your appointment as Commissioner for the financial matters in Europe, you can inform the French authorities that I have conferred upon you that appointment in the exercise of the full powers conferred upon me by the Honduras Government, of which you have a perfect knowledge. As you are well aware those powers were previously examined by Mr. Sharp, by Mr. Wynne, both eminent solicitors of London; by Mr. Grisar, by Messrs. Dreyfus, Scheyer, by their own solicitors, by Mr. George B. Kerford, and by several other eminent lawyers and business men, and the unanimous decision was that the powers in every respect were perfect, valid, and ample. Regarding this point it is impossible to raise the slightest doubt. I am persuaded that when you present these documents to the enlightened French authorities, in whose justice and impartiality I repose the most absolute confidence, they will at once exonerate you from all blame and censure.

CARLOS GUTIERREZ, Minister Plenipotentiary of Honduras.

Capt. Bedford Pim, Special Commissioner of the Honduras Government, &c.

[TRANSLATION.]
Jan. 1, 1873.

MOST EXCELLENT SIR,—I take the liberty of addressing this communication to your Excellency, with the view of bringing to the knowledge of your Supreme Government the unfortunate events which have occurred during the last few days in connection with the new loan, designed for the purpose of completing the Inter-Oceanic Railway, and paying the dividends on the English and French loans.

Doubtless the illustrious representative of the Supreme Government, Don Carlos Gutierrez, has already, in pursuance of his duty, informed your Excellency of all that has happened in this matter. If not, I venture to ask your Excellency's permission to explain and lay before you so much as has come under my cognizance, and the part which I have taken in this affair. For this purpose I must enter into some explanations, and refer to what has passed during several months up to the present time.

After the unfortunate result of the attempts made in London to raise a loan for the formation of a ship railway and the completion of the Inter-Oceanic line in course of construction, the bondholders in this country began to get uneasy, and to manifest their apprehension that the Supreme Government of Honduras would be unable to make good its promises or to carry out its intentions successfully to an end, and a thousand doubts were expressed of the probable ability of the said Supreme Government to face its engagements or to pay the dividends which would fall due at the end of the year.

In order to reassure these bondholders, it was deemed indispensable that a general meeting of Honduras bondholders should be convened, and such explanations as appeared advisable offered to them, as the only means of preserving the credit and reputation of the Honduras Government.

To carry this into effect, a man of mark and high social position was required—one whose reputation was sufficiently recognised to enable him to preside at the meeting. It was extremely difficult to find a person who, at the same time, possessed the requisite ability, and fulfilled the other indispensable conditions, and who would undertake so thankless and onerous an office. His Excellency Don Carlos Gutierrez was, for this purpose, as not desirous of performing the duty of Captain Bedford Pim, a distinguished officer of the British Royal Navy, of high social position, and well known in the city. With the above specified object, His Excellency Don Carlos Gutierrez conferred on this gentleman the appointment of "Special Commissioner of Honduras."

Captain Bedford Pim issued to all the bondholders a circular informing them of

the meeting about to take place. This meeting was actually held, and thanks to the ability and tact of the Special Commissioner, the result was perfectly satisfactory, for the bondholders supported Captain Bedford Pim's proposals, and unanimously resolved that he merited, and might rely upon, the support of the bondholders.

Up to this point things had gone as well as could be wished, and most of those interested congratulated His Excellency Don Carlos Gutierrez, as the Supreme Government is doubtless aware.

Matters were in this position when it began to be considered what would be the best means of obtaining the funds necessary for completing the Inter-Oceanic Railway, and continuing the payment in Europe of the dividends which would become due.

After a full discussion of various schemes, it was resolved to endeavour to raise a loan in Paris of 5,000,000*l.* sterling (nominal), under certain conditions, which the Government is aware of; and it was then that His Excellency Don Carlos Gutierrez did me the honour of associating me with Captain Bedford Pim, to assist him in the undertaking, giving to us both authority, under the powers which he (the said Minister) had received, to raise the above-named loan on the conditions determined on.

We remained for some time in Paris, treating with the principal bankers of that city, to induce them to undertake the new loan; but, in spite of our endeavours, we could not attain success, as these bankers pretended that the credit of Honduras was not sufficient to enable another loan to be placed; so that we were under the sad necessity of abandoning that idea.

Nevertheless, as the time was approaching for the payment of the coupon of the English bonds, due on the 1st of January, 1873, and to save as far as possible the credit of the Government, we resolved to make a final attempt; because it was evident that should the coupon and drawing not be paid in January, the credit and reputation of the Honduras Government would be ruined for ever.

It was thereupon decided that, without paying any more attention to the opinions of the Paris bankers, the loan should be issued under the management of the "Financial Agency of Honduras," which had existed in Paris since the issue of the first loan, for the purpose of paying the dividends, &c.

The preliminaries were arranged, and, persuaded that our efforts this time would achieve a brilliant success, we applied to His Excellency Don Carlos Gutierrez to obtain the necessary powers. This gentleman was then in Brussels, engaged on a diplomatic mission, and on being informed of the new scheme he did us the honour of entirely approving of it; but, out of deference to his colleague in Paris, he declined to give us the indispensable powers till he should have consulted His Excellency Don Victor Herran, Minister of Honduras at Paris.

This latter gentleman was requested to make himself conversant with all the circumstances, and to give along with Senor Gutierrez a joint approval and authorisation. Nevertheless, although he approved the scheme, he informed Senor Don Carlos Gutierrez that he was unable to give his official authorisation for want of the requisite powers, and the said Don Victor Herran added that he had received most distinct instructions, which would prevent his taking any part in matters of finance, and that he devoted himself exclusively to his diplomatic duties. However, he sent his son-in-law, Monsieur E. Pelletier, the Consul-General of Honduras, to Brussels, to see Don Carlos Gutierrez, and accordingly M. Pelletier travelled thither in company with two friends of Capt. Bedford Pim, and saw if E. Senor Minister Gutierrez could be persuaded that Senor Herran could not take any active part in the issue of the loan, still, in so far as he, the said M. Pelletier, could, he would be at his disposal to promote the success of the undertaking, being convinced that it was not only the best, but the only means of saving the credit of the Government of Honduras, already so much compromised.

Under these circumstances His Excellency Don Carlos Gutierrez gave full powers that the loan should be effected by the said "Financial Agency of Honduras," under the auspices of Messrs. Dreyfus, Scheyer, and Co., who undertook to prepare and carry out everything connected with the operation. Preparations were pushed forward, and Capt. Bedford Pim and myself expended a very considerable sum on the preliminary arrangements, public announcements, and newspapers.

On December 23rd last all the Paris papers, and most of those in the provinces, announced that the subscription was opened; and the contributions received on the first day exceeded our most sanguine hopes. The loan was covered, and gave a most brilliant result. Nevertheless, on December 24, Senors Herran and Pelletier published in the Paris newspapers a "public protest," wherein they declared that the loan was a fraud, that Captain Pim was an adventurer, and was acting without authorisation. Great was our surprise when this announcement appeared, as such an event could not have been anticipated after all that had occurred. Naturally, after this announcement, we had no option but to abandon the operation; the loan was withdrawn, and the money already in the chests of the Honduras agency was refunded to the public.

Unfortunately, this scandalous incident did not terminate here; for the said Senors Herran and Pelletier had the audacity to institute criminal proceedings against Senor Bedford Pim, and to cause him to be arrested, and (Paris being still under the law of a state of siege) to be manacled and dragged through the principal streets of Paris to the prison, wherein he was treated like a criminal, remaining in the condition for two whole days, and he was only set at liberty on depositing a sufficient sum to guarantee his appearance before the proper authority when called upon.

This abuse, as arbitrary as prejudicial to everything, has excited the minds of all who are in any way interested in the welfare of Honduras, and is, I believe, sufficient to ruin for ever in Europe its credit and reputation, unless the Supreme Government hastens to show publicly its disapproval of the conduct of its representatives in Paris, and dismisses them immediately.

This, I fear, will be the only way to re-establish, in a great measure, if not wholly, the good name which the Supreme Government of Honduras has up to this time enjoyed.

I much fear, however, that this same affair will cause some complication between the Governments of France and of England, for Captain Pim is not only a gentleman highly respected and of distinguished family, but is also a magistrate, and a person well known to the members of this Government.

It appears to me needless to dilate on the fatal consequences to which this lamentable occurrence may lead, or to tell your Excellency how deeply I have deplored it, as having taken place, as your Excellency knows perfectly well, the interest which I have ever taken in all concerning the welfare of the Republic, and which is abundantly proved by the very fact of my having taken part in the present operation, and supplied the funds required for launching it.

It now remains to be seen how the difficulty with the English bondholders can be arranged, as the dividends falling due this very day cannot be paid to them.

The difficulty remains undecided, and Captain Bedford Pim, by request of his Excellency Senor Gutierrez, has consented to preside at the general meeting of bondholders, to take place in London on Monday next, the 6th inst.

I request your Excellency, if considered advisable, to bring the above to the notice of His Excellency the President of the Republic, excusing my having done so at such length on this most important subject, because I consider it my duty to impart to the Supreme Government all that has come to my knowledge.

I beg your Excellency to receive the renewed assurances of my highest consideration.

TO HIS EXCELLENCY THE MINISTER OF FOREIGN AFFAIRS OF THE SUPREME GOVERNMENT OF HONDURAS.

Gentlemen, I have more to say on the general question. I presume that bondholders have come here to-day, as men of business, to look calmly into their affairs, and adopt the measures they may deem best to secure their interests; for my part, I will spare no exertion to assist them. The Commissioner of Honduras who has just arrived (Dr. Bernhard), has written a short statement, which he wishes read to the meeting, because his command of our language is not so perfect as he could wish. With your permission I will read it, and at the proper time you can ask him any questions.

GENTLEMEN,—I arrived only a few days ago from Honduras, charged with a special commission from the Government with reference to the Inter-Oceanic Railway in Honduras.

I can only assure you that the new Government of Honduras has the intention to act in the most honest, straightforward, and scrupulous manner with reference to the completion of the railway from sea to sea, and will spare no exertions to that end in the interest of the bondholders.

With this view I have been invested with full power from the Supreme Government of Honduras to act in connection with His Excellency Don Carlos Gutierrez, the Minister Plenipotentiary for the said Government to the Court of St. James's, and we are urgently instructed to spare no effort or sacrifice until we have carried out the project to sea. Be, therefore, assured, gentlemen, that the Government is firmly resolved to act in good faith towards you, and to use every means in its power to uphold its good name in this great country. Once our enterprise is finished, and the numerous resources of that magnificent region developed, Honduras will have far more than the necessary resources to satisfy all its engagements. This, gentlemen, is unquestionable, and no man who knows anything about Honduras can have the slightest doubt about it.

DR. BERNHARD, Special Commissioner of the Government of Honduras.

This statement is certainly encouraging, and I cannot but think that there is a fair hope that your interests will not suffer at all.

The CHAIRMEN (who were most cordially greeted with loud cheers when he made his appearance, and frequently vehemently applauded during the delivery of the most marked portions of his speech, his narrative of the treatment he had received from the official representatives of France creating lively indignation and general cries of "Shame, shame," from all parts of the crowded hall) then said: I have now only to invite you to consider the expediency in the existing position of our affairs of appointing a committee with ample powers to investigate everything, whether affecting our financial position or the progress and prospects of the railway, and, subject to your approbation, I would suggest the adoption of the following resolution:—

"That a committee, not exceeding nine, of which Messrs. Pim, Kerford, and Halsewood shall be invited to be members, shall be and is hereby appointed."

1.—To investigate the position, and ascertain the prospects of the railway and of the finances of Honduras in respect to each of the existing loans.

2.—To recommend to a future meeting of the bondholders two independent railway engineers of position and experience to be sent, if necessary, to Honduras, for the purpose of making a special survey of the unfinished portions of the line: what sum is really necessary for the completion of the undertaking and the purchase of plant, machinery, and rolling stock; and within what period the line might reasonably be expected to be finished and in working order.

3.—To consider what steps should be taken for the purpose of raising the necessary funds for the prosecution of the work, and for securing the rights and interests of the existing bondholders, and placing their affairs on a satisfactory basis."

I may mention that this resolution has the entire concurrence of His Excellency and of Dr. Bernhard, both of whom pledge themselves on behalf of their Government to afford the committee every facility in the prosecution of their enquiries. I hardly like to put the resolution from the chair, because I want the report to go out to the world that everything done here to-day has been done by yourselves—that you have been guided by no one, but have exercised your own independent judgment.

(Cheers.) I will only say that I believe most sincerely that the proposed committee, if formed, can in a very short time, with the means and appliances, and the documents which will be supplied to them, form a sound and accurate opinion upon the whole subject, and call you together to submit a scheme by which your interests may be protected, the property completed, and a great and useful work remain for the benefit of all parties. I should have personally preferred not to have been named as a member of the committee. I have not now the strength of mind and limb that I had some years ago. The severe physical exertion I have had to make lately has, you may be sure, not improved my health. In China, hard work and wounds did something to impair my health; but I can assure you that if I am appointed with the other two gentlemen named in the resolution, who are your trustees, I will be the faithful servant of the committee: every scrap of paper, every document which can throw any light on the position of your affairs, shall be cheer-

to the future prospects of the mine, and taking into account the locality, the geological position, the lodes traversing the entire length of the set, and of opinion that the shareholders will be handsomely repaid for their outlay." There reports were unanimously adopted.

The balance sheet of the company to Dec. 31 was then read, and also unanimously passed. The retiring directors, Messrs. Odling and Harcourt, were re-elected. The meeting having been made special, in order to carry out the proposal of the directors that the capital of the company be increased in order to further develop the undertaking, it was resolved that the share capital of the company shall be, and is hereby, increased to the sum of 30,000, by the creation of 3000 new shares of 10 each. It was also resolved, that 1000 of such 3000 new shares be issued and now offered to the shareholders in proportion to the existing shares held by them. A special meeting to confirm these resolutions will be held on Thursday, Jan. 30. A vote of thanks to the Chairman closed the meeting.

SOUTH CARN BREA MINING COMPANY.

At a meeting of the adventurers held on Monday (Mr. W. PIER in the chair), the accounts showed a debit balance of 1527*l*. The labour costs for October had been 362*l*, for November 384*l*, and for December 403*l*. The merchants' bills amounted to 792*l*. The receipts were:—For sale of copper ores, 553*l*; for sale of tin ores, 200*l*—which, with the reduction of dues, made a total of 750*l*. The balance against the adventurers at the last account was 1527*l*, and that, with the loss on the past three months' working, made a total deficit of 2900*l*. The agents report contained the following passages:—

In the 100 fathom level east we have intersected the cross-course and opened on the lode east away from its influence, but, finding the lode poor, we have suspended the drive. We have intersected a second cross-course in the 130 fathom level east, and we have put a cross-cut north, and intersected the lode to the east of No. 2 cross-course. So far as we have opened on it yet the lode is unproductive. We have suspended two stops in the back of the 130, and have now three stops working, with 10, 100, and 100 per fathom respectively. In the 140 west we have a very kindly lode, and yielding a little tin. We are forcing on this end, as we have a great extent of whole ground before us. The lode in the engine-shaft below the 100 yields excellent stones of copper ore, and has a very promising appearance. We have not been able to make any great progress in sinking on account of the water. The lode in the 150 and east yields fine stones of tin and some copper, and looks very kindly for a speedy improvement; but we regret to state that the level has not yet reached the profitable ore ground, nor drained the bottom of the 130, as we had hoped it would be now. Owing to the bursting of the H and top door-piece of the plunger-lift in the 90 fm. level the engine had to be idle for some considerable time, consequently the bottom of the mine has been full of water. This accident to the pumping machinery just at this time—which is said to be the latest season on record—and the sudden failure of our stops in the back of the 130 have greatly interfered with our returns. The water, however, is being pumped out as fast as possible, and is nearly as low as the 140 fm. level. In a few days we hope to resume operations in the 150, which we have been, and intend to continue, working vigorously. Looking at the stops as being nearly exhausted in the back of the 130, and the bottom of the level, where there is a fine course of ore not being drained by the 150 as soon as we expected, we are reluctantly obliged to advise the putting in of rods underground, connected with the pumping engine, so as to sink a pump-wire in the ore ground referred to. We purpose putting these rods in the 100 fm. level, and through the lode to the 130, which we can now do, as the stops east and west of mine are suspended.

It was decided that a call of 6*l* per share should be made, and that the purser should be instructed to apply to the lord of the mine for a reduction in the rate of dues, while the mine is being worked at a loss. The present dues are 1-15th for both tin and copper.

EAST POOL MINING COMPANY.

The two-monthly meeting was held at the mine on Monday, when Mr. DENNIS presided. The balance-sheet showed an expenditure of 5717*l*; the labour costs for October being 1888*l*; for November, 1547*l*; the merchants' bills, 1744*l*; moiety of the cost of making an award, and the expenses of the referee and umpire, 190*l*; and the dues, 318*l*. The receipts amounted to 6365*l*, including 1245*l* for sale of copper ore, 5007*l* for sale of tin, and 100*l* for sale of arsenic. The profits on the two months' working were thus 119*l*, out of which a dividend of 2*l* 6*d* per share, amounting to 800*l*, was declared. The remaining 19*l*, together with a balance of 21*l* from the last account, were carried forward to the next account. The agents' report was as follows:—

Jan. 13.—Great Lode: The 180 is driven east from the engine-shaft 19 fms., and is worth for tin 5*l* 6*d* per fathom. The 150, west of engine-shaft, is driven 6 fms. west of No. 2 mine, and is worth for tin 2*l* 4*d* per fathom. The 170 is driven 15 fms. west of the cross-course, and is worth for tin 2*l* 4*d* per fathom. The 170 east is the same as the 170 west. There are seven stops working in the back of the 170, worth 250*l* per fathom each stop, and two stops in the bottom of the same value. The 260 is driven south of Pyro's lode 4 fms. In this cross cut we have intersected a lode, and have driven into it about 3 fms. It is of a promising character, producing low-quality tin-stuff. There are two stops in the back of the 150, east of the cross-course, and two stops west, worth 1*l* 6*d* per fathom each stop. Engine Lode: A mine in the bottom of the 150, east of the cross-course, is worth for tin 1*l* 6*d* per fathom. A stop in the back of the 150 is worth for tin 20*l* per fathom.—South Lode: The 150 is driven west of the cross-course 15 fms., and is worth for tin and copper 1*l* 6*d* per fathom. The 140 is driven 6 fms. west of the cross-course, and is worth for tin and copper 1*l* 6*d* per fathom. The 130 is driven 6 fms. east from the western cross-course, and is worth for tin and copper 1*l* 6*d* per fathom. The mine over this end, sinking below the 100 fm. level, is down 18 fms.; the lode is large, and contains a little tin-stuff. There are two stops in the bottom of the 130, worth 25*l* per fathom each stop. A mine commenced in the bottom of this level, 20 fms. east of the cross-course, is worth for tin and copper 1*l* 6*d* per fathom.—W. S. GARDY (Manager), JOHN MAYNARD, JOHN HOSKING.

The CHAIRMAN mentioned that their term was drawing to a close upon their old lease, and within the last four months they had made application to the lord for a renewal, which they expected to obtain on very favourable conditions. Referring to the appearance of the mine he (the Chairman) said he feared that whether the discovery they had made on the south part was very profitable or not, but looking at the tremendous levels they were driving to get towards the 150 he hoped it would by and by prove to be of great assistance to them. The 150 and the 140 fathom levels and the mine were being sunk with a hope of ventilating the property in store for them, but at the present time they were certainly working on towards that discovery at a disadvantage, while at the same time they were endeavouring to reach it as soon as possible. They were raising much tin-stuff at present, which would make them feel a little clearer sky ahead. The agents' report was then adopted, which would make them feel a little clearer sky ahead. The agents' report was then adopted, which would make them feel a little clearer sky ahead. The agents' report was then adopted, which would make them feel a little clearer sky ahead.

WICKLOW COPPER MINE COMPANY.

A stormy meeting of the proprietors of the Wicklow Copper Mine Company was held on Saturday, for the purpose of considering a reply to the directors to the report which emanated from the committee of enquiry recently appointed, in which they were charged with mismanaging the concern, "cooking" the accounts, and giving dividends out of capital in place of out of legitimate earnings. In the reply the board deny the mismanagement, but admit that there had been false estimates made as to the quantity of stock (ores, &c.) on hand, upon which erroneous returns the dividends recommended from time to time were struck. The CHAIRMAN, in moving the adoption of the report and statement of accounts for the half year ended Sept. 1, 1872, the consideration of which had been adjourned pending an enquiry into the company's affairs, said they withdrew the passage recommending the payment of a dividend, inasmuch as the cash in hand when the report was framed, and then available for the purpose, had since been expended on works, &c. A discussion arose on the proposition, in the course of which members of the shareholders' committee proposed at great length to justify their allegations, but finally the resolution as proposed by the Chairman, providing against the payment of any dividend this half year, was passed. The re-election of the outgoing directors was contested, and others being nominated in their room, the polling was adjourned till Monday, when the result of the scrutiny was—Messrs. Joshua G. Pennell and Richard Wood Kelly, the outgoing directors, were re-elected. Mr. Arthur Andrews was elected a director in the place of the late Mr. Barnes. Messrs. Joseph Casson and Wm. Archer were elected auditors.

ST. JOHN DEL REY MINING COMPANY.

A general meeting of shareholders was held at the company's office, Tokenhouse-yard, on Wednesday.

MR. R. S. ILLINGWORTH in the Chair.

The SECRETARY read the notice convening the meeting, and the minutes of the previous meeting were read and signed by the Chairman.

The CHAIRMAN requested that he had to occupy the chair in consequence of Mr. Hoek's absence through illness, which, however, they believed was only temporary. The directors were in hopes that the mail would have arrived that morning, and that they would thus have been furnished with some additional information to furnish to the shareholders, as it was, however, their business would be limited to the confirmation of the resolution passed at the meeting on Dec. 20. He concluded by formally moving its confirmation.

A SHAREHOLDER enquired when the last call of 1*l* per share would be required. The CHAIRMAN said it would not be wanted before the end of February; they proposed to make it on Feb. 29; and in reply to other enquiries he stated that they could not promise that the present capital would be sufficient, but hoped so. In deed, the matter had not been discussed by the board; they would have ample funds to go on with for some months, and they hoped by that time the shafts would be through and their difficulties over.

A SHAREHOLDER understood that a great deposit had been found in the shaft, and would be glad to know if it was being worked?

The CHAIRMAN said it was not a formed lode, but an ore deposit, not at present remunerative to work, although it no doubt would be when the shafts were through. They were at present sinking at the rate of 4 fms. per month, and would hereafter increase the speed. The reason that no formal assay had been made was because it was known that at present the deposit was unavailable, and the publication of an assay, which at best would be unreliable, would tend to raise expectations which might not be realised. It was supposed to be worth about 35*l* cits. to the ton, but the only way of fairly testing it was to pass a few hundred tons through the stamps and treat it.

A SHAREHOLDER presumed that if the discovery proved anything material they would cease working the miserable Gaila. The CHAIRMAN said they were gradually stopping working there already.

Mr. ILLINGWORTH, JR., who had been at the mines, said they could not at present work the mine without interfering with the sinking of the shafts, nor would it be at present pay to work it. The new discovery was, however, seen in both shafts, and when they had made further progress they would turn it to account.

count. It had not been seen in the upper levels. The shaft had at present been sunk 47 ft. in it.

The confirmation of the resolution was then unanimously agreed to, and the proceedings terminated with the usual complimentary vote of thanks to the Chairman.

PINTO SILVER MINING COMPANY.

A special general meeting has been convened for the purpose of passing a resolution for a voluntarily winding-up of the company. It appears that the directors have been able to save the company's mill and mines from being sold to defray the debt due to the bankers in Nevada, but have not succeeded in raising any further capital for working the mines, although their superintendent and other gentlemen acquainted with the district consider the prospects of the undertaking to be very encouraging; they have, therefore, no resource left but to wind-up the company. This offer is as follows:—That subject to the Pinto Company's mortgage and other debts the new company will give to the Pinto shareholders the choice of one or other of the following options:—1. To receive one fully paid-up 5*l* share in the new company for every ten shares in the Pinto Company (Limited); 2. To receive the same number of 5*l* shares in the new company as the holder in the Pinto Company Limited is entitled to, on the proportion of that number that he may require, with 4*l* 10*s* 6*d* to be paid thereon. The two options are distinct, and shareholders cannot take any benefit under No. 2 if they accept the terms of No. 1. No cash will be paid to the vendor in the new company by the purchasers. The purchase-money will be entirely in shares and debentures, and it is intended to raise a further capital of 25,000*l*. If this or any sufficient amount be raised the directors of the new company hope that it will not be necessary to call up the 10*s* per share, otherwise it will be called up by instalments extending over a considerable period.

SILVER STAR MINING COMPANY.—An extraordinary general meeting was held on Wednesday, Mr. Elliott in the chair. The Chairman said the sole business of this meeting was to pass the resolution for winding-up the company. The long-expected report from Prof. Clayton had only just been received, and although he had not yet perused it he hoped it would be of such a nature as would enable the predictions held out to be fulfilled, and the other company formed. In that case all the costs incurred by this company would be borne by the new company. The amount incurred was really little more than was usually paid for preliminary expenses. The directors had taken nothing for their twelve months' services, although they had done a considerable amount of work. He added that proxies were held from nearly the whole of the shareholders entitled to vote. The resolution was put and carried unanimously. Messrs. W. P. Black, J. Davis, and W. Matthews were appointed liquidators, and a sum of 100 guineas being voted for their remuneration. A vote of thanks to the Chairman and directors terminated the proceedings.

[For remainder of Foreign Mines see to-day's Journal.]

VAN MINING COMPANY—MONTHLY REPORT.

Jan. 15.—As under, I beg to hand you monthly report and settling list.—Seaham's Shaft: The 3 fathoms stent below the 60 is completed. The cistern has been fixed and the lift dropped to the 60, and our main rods lengthened 15 fathoms, so that we are now ready to pump from the 60 as soon as the lode is tapped in the cross-cut. The shaft is also cased and divided, and the rods for the cage put in; in fact, the shaft is completed to the level. The depth of this shaft from surface is 56 fms., and is at this depth 20 fms. south of the lode; the latter keeps the same underlay as it did from the 15 to the 45, but it may probably be a little further, as the deeper we go the lode gets more perpendicular. We shall resume the sinking in about a month's time. We have yet 80 fms. to sink before Seaham's shaft meets the lode, which will make its depth from surface 136 fms. I observe that in the insertion in the Mining Journal of my report of Nov. 20 last a misprint occurs. Writing of the 60 cross-cut the Journal states—"The lode has been cut to full width," &c., which should have been—"The lode has been cut to full width." In our own Journal a correspondent, writing of Central Van, takes advantage of this misprint, and has based upon it some very erroneous calculations. I have had several applications from our shareholders, enquiring "What is Central Van?" and "Where is it situated?" The various correspondents writing in the Mining Journal represent it as embracing a large portion of ground upon the Van lode, and that the Van workings in that direction will eventually be materially obstructed unless the two mines are united, and expressing their surprise that the Van Company ever allowed such a valuable piece of ground to pass into other hands. To these communications I feel obliged upon, in justice to ourselves, to reply. The mine of Central Van set within a quarter of a mile of the Van lode is small triangular field to the south of our lode. In the north corner of this field they have sunk a shaft, which, according to their own report, is 7 fms. south of the line of our Seaham's shaft. This being the case Seaham's shaft has to be sunk 136 fms. from surface to meet the lode, which runs east and west of the Central Van shaft, which is 7 fms. to the south, and the underlie of the lode being 1 in 4, must be sunk 28 fms. deeper than Seaham's to intersect the lode, or a depth of 164 fms., less 8 fms. which the top of the Central Van shaft is lower than Seaham's, which is 156 fms. At that depth they have 14 ft. each side their shaft to drive upon the course of the lode till they reach the boundaries; or, in other words, the whole length of their shaft at this point is 38 ft. I should be very glad to hear for the benefit of the Van Mining Company, that they have a good lode at that depth. The cross-cut north for the lode at the 60 is driven 12 fms. We calculate that we have about 8 fms. more to cross to intersect the lode; set to seven men as 150*l* per fathom. The shaftmen are employed cutting a "loom" under the lode to hold water in case of any stoppage of the pumps. When they have completed this we shall resume the sinking, as before stated. The 45, west of engine-shaft, is now extended 74 fms. along the course of the lode. The lode at the present end is worth 100*l* per cubic fathom; set to six men at 240*l* per fm. We have set eight men to strip down the lode to full width eastwards from the 72 cross-cut in the side of the same level, west of shaft, at 140*l* per fathom. The stripping down of the lode to full width, west of the 54 cross-cut in side of the same level, is set to eight men, at 140*l* per fathom. The stripping down of the lode east of the same cross-cut is set to eight men, at 130*l* per fathom. The average width of the lode at these points is 3 fathoms, and worth 50*l* per fathom. The 44 fm. stop in the back of the 45, west of shaft, is set to eight men at 120*l* per fathom. The 37, to eight men, at 8*l* per fathom. The 30, to eight men, at 8*l* per fathom. The 24, to four men, at 8*l* per fm. The 16, to six men, at 8*l* per fathom. The 8, to eight men, at 8*l* per fathom. The 8 fm. stop, east of shaft, to eight men, at 8*l* per fathom. The 16 stop, east of shaft, to eight men, at 8*l* per fathom. The lode in these stops is worth 40*l* per cubic fathom; average width 15 ft. The cross-cut at the present end of the 45, east of shaft, is driven into the main lode 14 ft. 6 in., but at this point it is unproductive. We have now resumed the driving of the level by six men, at 70*l* per fathom. The stripping down of the lode to full width west of the 30 cross-cut in this level is set to eight men, at 120*l* per fathom. The stripping of lode to full width at a point 24 fms. east of shaft, in the same level, is set to eight men, at 120*l* per fathom. The value of the lode at these two points is 40*l* per cubic fathom. As soon as we have intersected the lode at the 60, which will drain the water from the 45, we shall start sinking a mine below the latter level to ventilate the 60. The 30, east of shaft, is now driven 60 fms.; set to four men to drive in the soft by the side of the lode, at 70*l* per fathom. In another fathom driving we shall cross north to prove the value of the lode; this will be 10 fms. from the last cross-cut. The 30 west of shaft, has been set to four men, at 75*l* per fathom. In a few days we shall be able to sink a mine below at this point, 90 fms. west of the shaft, in order to ventilate the 45 when it reaches that point. The 30 per fm. or type, level in the country rock is set to six men, at 110*l* per fathom. The 56 stop, in the back of the 30, west of shaft, is set to six men, at 100*l* per fathom. The 75 stop, to eight men, at 90*l*. The 70 stop, to eight men, at 90*l*. The 61 stop, to eight men, at 85*l*. The 54 stop, to four men, at 90*l*. The 45 stop, to six men, at 90*l*. The 40 stop, to eight men, at 85*l*. The 35 stop, to six men, at 85*l*. The 30 stop, to eight men, at 80*l*. The 8 stop, to eight men, at 80*l*. The 8 stop, in the back of the 30, east of shaft, to eight men, at 70*l*. The 16 stop, to eight men, at 70*l*. The 16 stop, in the back of the 15, east of shaft, is set to six men, at 80*l* per fathom. The 16 stop in back of the 15, east of shaft, is set to six men, at 70*l* per fathom. The 8 stop, in back of same level, is set to six men, at 90*l* per fathom. The 54 stop, in back of same level, west of shaft, is set to four men, at 80*l* per fathom. The average width of these four stops is 17 ft., worth 120*l* per fathom. We have set to two men to cross through the lode at the present end of the all level, east of the shaft, at 130*l* per fathom. Set to 12 men to deliver all the stuff into the cage at Seaham's shaft from the different levels throughout the mine, at 5*l* 4*d* per score tramload.—Surface: The masons are progressing very fairly towards completing the second block of the cottages. The first block comprises six cottages, which are all inhabited. We find them already of great service to the mine, each house being large enough to accommodate six lodgers. The machinery is in good working order. The new slime machine, for the low percentage slimes, works admirably. Our monthly sale takes place to-morrow, upon 450 tons of lead and 150 tons of blende.—WILLIAM WILLIAMS.

EAST BOSCAWELL (St. Just).—In a little over 12 months this mine has been forked to the 120 (the bottom of engine shaft), the skip-shaft timbered and secured, skip-roads put in to the same level, dressing-floors laid out, 32 heads of stamps erected, and five Borlase's patent buddles completed. In addition (this is the important item) three monthly sales of over 6 tons of tin have been made. These results have been accomplished so quietly that the investing public know scarcely anything about the property. The number of men employed on the mine is about 100, with some 20 boys and girls on the floors. The prospects are such that the agent states he has every confidence in the mine becoming a good dividend paying property, and he shows his confidence by subscribing for shares and paying his calls. The whole of the share capital was subscribed for privately, and the meeting of shareholders was determined to issue 1000 additional shares, for the purpose of raising more machinery, and the value of the tin may be largely increased. These shares are to be offered, *pro rata*, to the present shareholders at par. The fact of the original shares being sold at 3*l* 6*s* premium (the present price) must cause the ready absorption of all the issue by present holders for investment.

EAST BASSET.—This mine is within an easy distance (1½ mile) of the mining town of Redruth; it lies eastward of Wheal Basset and northward of Wheal Buller, both mines of renown for their immense yield and profit to the companies. East Basset has been at work about 20 years; it was a small sett, but it furnished copper ore of high produce in large quantities, and considerable profit. Recently the sett has been greatly extended eastward, having the addition of nearly all Copper Hill sett and other land, affording a great length on the lodes in that direction. The additional ground was for a long time "locked up." Now that it has been secured by this company, spirited operations are to be applied to the two copper and the several tin lodes in the sett. For many years it was like its neighbours at first, and until recently worked for copper only, but now tin is the predominant metal, and to return this in large quantities it only requires the usual appliances. After a little while I have no question that large dividends will be paid to the shareholders.

WEST BASSET, a mine a little westward of, and on the same lodes as East Basset, the shares in which a short time ago could be had at 1*l* each, are now marketable at about 13*l* each. This, too, was a copper mine, but it now yields about 30 tons of tin per month, and the returns are still on the increase.

THE COPPER TRADE—1872.

The year just closed has been one of great activity in all branches of the metal trade, and notwithstanding extreme fluctuations in price, difficulties with workmen, and scarcity of fuel, the Copper Trade has had its share in the general prosperity. The extent of the speculative operations in copper has been, perhaps, the most remarkable feature of the year. Nothing at all like it has been seen since 1865-6, and for a similar range of fluctuations we must go as far back as 1858. By articles in newspapers, reviews, and magazines all sorts and conditions of men were induced to interest themselves in the metal. It was shown by figures and arguments, apparently conclusive, and presented with great ability, that before the end of the year the world's stocks would be so much reduced that famine prices must prevail. Although copper was at the beginning of the year 25*l* per ton above the lowest point touched in 1870, the confidence in the future was strong enough to cause a further advance of 20 per cent., which was more than lost in the sequel, furnishing a fresh illustration of the rapid action of high prices in these days in bringing forward supplies from every quarter of the globe. Among the other notable events of the year, the American demand for copper and the large importations from Japan were the most important.

THE MARKET was firm at the beginning of the year at 85*l* for Chili bars, and a further advance of 3*l* took place early in January. Thereafter, till the middle of March, the trade was rather unsettled, and prices dropped, the transactions ranging down to 82*l*, with one considerable operation at 80*l*. In March, America appeared as a buyer, and the general demand revived with great strength. From that time the advance was rapid and continuous till June, when 108*l* was paid; the advance of large shipments to this market from Chili, Japan, and the Cape not damping the ardour of operators. About the middle of June, however, prices began to recede. By the end of July a fall of 7*l* per ton had taken place. In August, when the gradual increase of the stocks to the extent of 9000 tons since Jan. 1 began to attract attention, the downward movement to 80*l* was very rapid; a speculative improvement to the extent of 10*l*, in a single week being as quickly lost. The failure of numerous speculative holders, the dearth of money, and the general uncertainty as to the future, caused prices to drop during September and October, until as low as 77*l* was accepted. At the end of October it became evident that consumers and investors alike had made up their minds that copper was safe at about 80*l*; and from that time till the middle of December a comparatively steady business was done between 80*l* and 85*l*. During the past fortnight an apparently genuine revival has taken place, considerable orders from America and from home and continental consumers have been executed, and the demand for manufactured has been good. Prices have advanced 8*l* per ton in the fortnight, and we are now firm at 91*l* for Chili bars.

THE IMPORTATIONS of last year were unprecedentedly large, exceeding by 16,800 tons those of 1871. The following are the figures for the last five years: the imports from Chili according to the Swansea and Liverpool returns, the others according to the returns of the Board of Trade:—

	1868.	1869.	1870.	1871.	1872.
From Chili	45,000	46,100	47,900	58,200	44,100
From Australia	6,906	7,470	6,811	8,268	11,826
From all other countries	17,835	13,964	12,912	11,558	17,365
Of pyrites	5,743	9,582	10,288	11,300	12,908

Total Tons 74,974 78,226 77,911 89,324 86,199

As will be seen hereafter, however, this increased import is not necessarily a proof of augmented production.

The stocks held in Chili on Jan. 1 of each year, and the shipments from thence during the last five years, are given as under. Not having the exact figures, we estimate the shipments for last year and the stock at this date:—

	1868.	1869.	1870.	1871.	1872.
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Stock on Jan. 1. Tons 3,000 2,000 3,400 6,800 5,750 4,000

Loading " 5,400 9,250 7,150 4,200 5,700 5,000

Shipments 43,669 34,567 40,750 41,200 46,000

From these figures we calculate the production of Chili to have been:—In 1868, 40,669 tons; 1869, 32,567 tons; 1870, 37,350 tons; 1871, 34,400 tons; and in 1872, 40,250 tons. This falling off (4400 tons), as compared with 1871; 5100 tons, as compared with 1870; and 14,500 tons as compared with 1869, is attributed chiefly to the scarcity of labour, and to the difficulty of procuring fuel, even at enormously increased cost. The fatal prevalence of small-pox, the development of silver mining, and the demand for men for railway works have been the chief causes of the scarcity of labour available for the production of copper, and the two last continue in full force. Coal is cheaper than it was, but the activity of the iron trade, and the strikes of coal miners, make it difficult to count on a return to normal prices this year. Perhaps the most frequently asserted exhaustion of many of the richest copper deposits must now be accepted as another cause of decreased production in Chili. In spite of the stimulus of the high prices, therefore, we are inclined to think that Chili will not be able to send us this year more copper than in 1872, if so much. There is evidence that the production of Australia, the Cape, and some other foreign mining districts has increased to the extent altogether of about 3000 tons. The large profits realised on wool in Australia have enabled the colonists to invest largely in mining, and we may, therefore, expect still increased imports of copper from thence this year. The excess of our imports last year is explained, as regards about 2000 tons, by the cessation of shipments from Australia to India.

The enormous development of the pyrites trade continues to add to our supplies of copper. The increase in 1872 amounts to about 1600 tons of fine. The production of this country appears to have again slightly fallen off—we estimate it at 6000 tons for 1872. The following are the figures for the last five years:—

	1868.	1869.	1870.	1871.	1872.
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Tons 9817 8291 7175 6280 6000

It would seem, therefore, that the decrease of production in Chili and the increase in all other places about balance each other, and that the increase of imports is due to the high prices which for some time ruled here, and to the extraordinary expectations held out of further advances, which caused the transfer to our market of the stock held in Chili and of the surplus stocks of all other parts of the world. We ought to add, however, that there are grounds for expecting constant supplies in future from Japan, though not on anything like the same scale as during last year.

THE EXPORTS last year were 9000 tons less than in 1871. We give the figures for the last five years:—

	1868.	1869.	1870.	1871.	1872.
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Tons 56,614 42,991 51,949 54,340 45,273

This falling off has taken place in spite of large shipments to the United States, and in all other places about balance each other, and that the increase of imports is due to the high prices which for some time ruled here, and to the extraordinary expectations held out of further advances, which caused the transfer to our market of the stock held in Chili and of the surplus stocks of all other parts of the world. We ought to add, however, that there are grounds for expecting constant supplies in future from Japan, though not on anything like the same scale as during last year.

HOME CONSUMPTION was less active last year than in 1871. During the early part of the year manufacturers were busy with the execution of old orders, but the new business of 1872 shows a considerable falling off as compared with the previous year. The demand for railways and engineers has been the mainstay of the market for manufactured copper and brass. The exports of hardware, steam-engines, and machinery exceeded by 30 per cent. in value those of 1871, and no returns of quantities; but this excess, perhaps, represents little more than the rise in price. On the other hand, the exports of telegraph wire only amounted to one-fourth of those of 1871. On the whole, the Birmingham trade and the home trade generally have not been so good as in the previous year. The copper rolling trade has, as usual, been unprofitable, but the yellow metal trade has again been fairly good—the high price of iron having given a new impetus to the building of wooden ships, and the new tariff Act having re-opened the American market.

THE STOCKS in London, Swansea, Liverpool, and Havre, and afloat and chartered for from Chili, are estimated as follows, as compared with the previous year:—

	Jan. 1, 1873.	Tons 32,87.	Afloat and chartered for.	Total.
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1872 18,554 12,000 30,554

1871 35,739 11,400 47,139

1870 30,502 14,287 44,789

1869 22,422 12,726 35,148

1868 19,835 12,236 32,069

The bulk of the present stock consists of Chili bars and Wallaroo copper, almost the whole supply of the other kinds imported having gone at once into consumption.

THE POSITION at the beginning of last year was:—We imported, in 1871, 7700 tons less than in 1870; exported, 2400 tons more than in 1870; and the stock on Jan. 1, 1872, were 17,000 tons less than on Jan. 1, 1871. Our present position is that during the year we imported, in 1872, 16,800 tons more than in 1871; exported, 9000 tons less than in 1871; and the stock to-day are 14,500 tons more than on Jan. 1, 1872. As the surplus stocks of the year are now concentrated here, we think we are warranted in assuming that, in spite of increased production, the imports of this year will be 10,000 tons less than those of last year.

The increase of population, and the development of trade in the United States have increased the consumption of copper beyond the capacity of production of the Lake Superior Mines, and we may hope for such a regular and possibly large demand henceforward from that quarter as to materially influence the course of the article. The famine in Persia, and the successive bad harvests in India have injuriously affected the copper trade of Bombay and Calcutta for the last two years. Consumption has been arrested, and when prices advanced in the two ports in sympathy with our market the up-country dealers sent down large quantities to be sold there, some portion of which eventually came to England. It is said that the dealers in the bazaars of the interior will no longer, even in ordinary times, keep more than half the stocks they used formerly to hold, on account of the facilities they

2. "Memorials of Liverpool, Historical and Topographical; including a History of the Dock Estate." By J. A. PICTON, F.S.A. 2 vols. 8vo.; Longmans.

THE LONDON MINING BUREAU.

The organisation of the London Branch of the Pacific Coast Mining Bureau, which has been opened at the offices of Messrs. Elkin, Goetz and Co., 5, Great Winchester-street-buildings, by Col. Berton, Vice-Consul of France in California, and President of that institution, was authorised by a decision of the late annual convention of the members of the Bureau and delegates from every mining county of the Pacific States and Territories. It will be seen by the following remarks that English and continental capitalists, together with mining shareholders and intending investors in mines located in California, Nevada, and on the Pacific Coast, will be furnished by the London Bureau with most reliable means of ascertaining the standing and real value of mines and mining properties previous to their being introduced on the English or other European markets.

The Mining Bureau was founded three years ago in California, at the request of a number of English and French capitalists and mining shareholders, and upon the basis advocated by the *Times*, the *Mining Journal*, and other leading papers—protection of European capital against the numerous fraudulent and worthless mining schemes concocted in San Francisco and elsewhere, and prepared for the English market. The usefulness of that institution was recognised by the principal foreign consuls on the Pacific Coast, and by them strongly recommended in a number of official despatches forwarded to their respective Governments. Some of these documents were published by the *Times*, the *Mining Journal*, and other leading organs of public opinion in Europe.

The efficiency of the Mining Bureau has been since fully demonstrated for its having successfully, although not entirely, checked that disastrous system of wild cat mining, which since the early days of gold and silver discoveries in California and Nevada, until the late gigantic diamond frauds, constituted an almost uninterrupted succession of swindles perpetrated upon the credulous European as well as American public, by a ring of unscrupulous San Francisco schemers, in conjunction with a class of dishonest London promoters. Such system has, in fact, ruined thousands of shareholders on both sides, while it has brought discredit upon the bona fide mining interests of the Pacific States, and has, unfortunately, delayed for a certain time their legitimate development.

But, although the Mining Bureau has disconcerted originators of fraudulent schemes, and to a great extent discouraged their preparation for the English market, there still remain a number of these schemes which have escaped the vigilance of the Bureau, and have since been placed in the hands of promoters for an early introduction on this and other European markets. The London branch of the Mining Bureau has been established for the express purpose of checking the introduction on this side of all doubtful mining schemes originated on the Pacific Coast. As for the bona fide mines which may have been examined and favourably reported upon by the Bureau or by any other recognised competent authorities they will not be in any way interfered with by the London Bureau, except in cases where intending purchasers or any interested parties apply for a counter examination, or for a valuation of these properties previous to their being purchased, paid for, or introduced to the investing public in Europe. A final and independent examination and a judicious valuation of bona fide mines will render next to impossible their usual negotiation at such exorbitant prices as to doom purchasing companies to an ultimate, if not to an immediate collapse, to the great disappointment of shareholders, as well as mine owners, whose property will be rendered unmarketable on both European and American exchanges.

Duties of the London Mining Bureau.—The London Mining Bureau will, on application from any interested party, and as provided by the bye-laws of the Pacific Coast Mining Bureau, cause any mine or mining property located in the Pacific States territories, including Utah, to be examined or counter examined, as the case may be, also to be surveyed and reported upon by competent mining experts or engineers, geologists, and surveyors expressly appointed for that purpose by the authorities of the Mining Bureau. Valuation of mines or mining property will be furnished on short notice to applicants who may desire to obtain it, previously to entering into any kind of negotiation. Examination and valuation of mines and mining property are made under the direction of the Bureau, and as far as practicable under the president's personal supervision. Reports thereon are approved under the official signatures and seals of the Vice-Consul of France and President of the Pacific Coast. An authenticated copy of all reports, maps, and other official documents concerning mines examined by the Bureau will be forwarded to the London branch, who will keep them on file. Certificates of such reports as may be required will be delivered on application.

We understand that a number of mines have already been referred to the London Bureau for investigation previous to being taken by English companies. During his recent visit to England, before returning to his post in California, Col. Berton will be in daily attendance at the Branch Office in order to answer personally any communication or enquiries from interested parties.

MINES IN CALIFORNIA AND NEVADA—THE LONDON MINING MARKET.

For some time past we have noticed a disposition on the part of English mine-owners to complain of purchases made by them, especially of mines located in California and Nevada, which have been secured through the intervention of residents of this city. While we are aware that there are schemers in San Francisco who would willingly assist upon their English "cousins," if circumstances were favourable, we heartily protest against having our solid men dragged into the quagmire. Quite a number of California and Nevada mines have been disposed of on the London market, many by unscrupulous agents, upon false representations, and others, based upon the reports of well informed experts and reliable authority. Some have been sold for sums far beyond their intrinsic or prospective value, others for a reasonable value upon one or in sight and developments to be made. It is not surprising, all things considered, that our English cousins should frequently find themselves called upon to "protest" against what they indignantly term the swindles perpetrated upon them by California mine-owners, for men always complain when their ventures fail to yield large returns. But when mines which have been purchased fulfil all the expectations of their sanguine owners, paying regular dividends, and otherwise proving to be valuable properties, we hear little concerning them in the *London Mining Journal*. Dividends are declared, the stockholders congratulate themselves, directors are voted an increased compensation and vote of thanks for their arduous labours; but no word is said for those who sold the mine. Unfortunately, these cases are exceptions to the rule, which has become chronic, and scarcely an issue of the journal to which we have referred but teems with reports of meetings of stockholders of California or Nevada mines where the management shows that the expectations of stockholders are not realised, and general demoralisation and denunciation result.

We have taken some pains to ascertain how far these complaints are founded in fact, desirous of exposing the guilty parties who are engaged in these systematic attempts to defraud through the medium of the London mining market. And a full and impartial examination and investigation shows to our satisfaction that whatever may be the condition of affairs in London, the mine-owners of San Francisco who consent to their sale in the London market are guilty of any attempt to defraud or misrepresent, and are not deserving of the odium heaped upon them by the London press. The fault and crime is in London, and the London "promoters," who manipulate matters for English capitalists, are the guilty ones upon whose shoulders the blame should rest. The following example will show how a Californian mine is "prepared" for the London market—A is the owner of a mine in Sierra County, California, which he is willing to sell for \$100,000 cash, being the real value according to his judgment. The agents of certain English capitalists learn of A's desire to sell the mine, and propose to "buy" the same. "To be sure," is the favourite *sine qua non* with the agents of English capital. Now, A wishes to sell for cash upon the merits of his mine as demonstrated. But the agents say, "We will take a bond of your mine for six months at \$200,000—that will give you a large margin and you can afford to wait. It seems strange that such large inducements can be offered to mine-owners for delay. A moment's examination into the "bonding" system shows how it operates. It is the game "head's I win, tails you lose," the advantages all being with those who secure the bond. The mine-owners agree to sell his mine for \$200,000 at any time within six months, but the others do not agree to buy it. If the mine develops in richness during the six months it is to the advantage of those who hold the bond; if the vein pinches out the "bonders" abandon their purchase entirely. It is a privilege valuable to the owners of the bond only, and for this reason they must offer extraordinary inducements to the mineowner to wait six months for purchasers to make up their minds. If the cash were paid the owner would willingly take \$100,000, but to run the risk of bonding and waiting the turn of events—looking up his mine for six months—he receives a large advance on his original cash price.

We will now suppose the mine bonded: the agents and promoters appear upon the London market with a brilliant prospectus, and invite subscriptions to the stock of the Sierra Mining Company, or whatever name may be adopted, with a capital of (say) \$500,000, the amount for which the mine is bonded being increased *ad libitum*—the amount in excess of the bonded price going to the "clever" promoters as "commissions" for their arduous labours. The company is organised; stock subscribed for upon the report of experts chosen by the promoters, who give favourable accounts; the mine-owner is paid his \$200,000 out of the subscriptions, while the promoters pocket the balance, and the shareholders await their dividends. The annual meeting is called, when the Chairman announces "No dividends, and no dividends in prospect." Whereupon there is a hue and cry. "Say the shareholders: 'We purchased this mine for a large sum of money upon certain representations, which have not been realised; these men in San Francisco who sold the mine are arrant rogues, and if there is any law in the kingdom it ought to be invoked to bring them to justice.' The San Francisco mine-owners bear the brunt of the odium, while the London "bondmen" go scot free. Why have these expectations failed of realisation? Simply because a mine worth \$100,000—and ready to be sold at that figure in the San Francisco market, for cash—has, through the medium of agents, experts, promoters, and other go-betweens, been foisted upon a company of Englishmen at a price five times its value. How can a property valued at home at \$100,000 pay a profitable dividend upon a forced valuation of \$500,000? Hence the complaints which have become chronic from the English press. There are cases which might be made exceptions to the rule, and which ought to be mentioned, but it seems a rule that nothing of praise shall ever appear in the London journals concerning California mines. The Sierra Buttes Mine may be sold at a reasonable figure, upon the best and safest of terms, to an English company, and prove a most brilliant investment, but the *Mining Journal* will ignore its existence. Other cases might be cited, but they would be considered by the average English shareholders as exceptions to the rule.

In conclusion, we would to the manner born, have a few words of advice to give our English cousins who are anxious to invest their surplus capital in California or Nevada mines. There are plenty of valuable mines which can be secured for the English market. Let purchasers send authorised and honest agents to conduct negotiations and purchase mines, after examination, at their San Francisco value in cash. Let the bonding system be abandoned, it is too prolific of corruption. When companies are organised in London let it be upon the basis of the real price paid in San Francisco, without any inflation or watering. In this way London shareholders at their annual meetings will be met with substantial returns and not find their expectations unrealised. Let the fault be placed where it belongs, upon their experts or agents who have failed in their duty, and not upon those who sell the mines in California, who are compelled to accede to the terms and the rule in the mines in the London promoters. And let them bear in mind, as the rule in the present bond system of buying and selling mines, that our San Francisco mine owners are not to be blamed for the shortcomings of mines which are expected to pay dividends upon fictitious values fixed upon in London by the promoters.—*San Francisco News Letter*, Dec. 21.

FOREIGN MINES.

ST. JOHN DEL REY MINING COMPANY (Limited).—Advices received Jan. 2, ex steamer *Lifey*, via Southampton:—*Morro Velho*, Nov. 29, 1872.—CONDITIONS OF THE NORTH SIDES OF THE SHAFTS: Brief reference has already been made to the north side of the shaft A, on the occasion of my having examined it on the 14th of the current month (November). The fissure or joint crack in that shaft was carefully measured, and its length and direction given.

It should be remembered that the sump of the A shaft is now going down south of the southern wall of the Cachoeira East, and that when that excavation had reached the horizon the A shaft is now approaching, the south wall was so jointy, the lode at the same time being so very small in that section, that it was considered there was mineral south of it. To try this a cross-cut was driven south at the East Cachoeira, but no mineral was then reached. The lode or mineral body then considered as wanting. But of this it is not practicable, under present circumstances, to speak with any degree of confidence. We must see more of the form, extent, direction, and dip of the mineral body in the shafts before a sound opinion can be formed thereon.

The southern wall of the East Cachoeira (being also the hanging wall) we know has been always exceedingly jointy, and, unlike a permanent wall, being very difficult to keep safe, requiring much pillar and timber work to support and secure it. It is possible, and it is not improbable, that the shaft A has on its northern side the same quality of character of wall as was seen on the south side of the East Cachoeira excavation. At present there does not appear to be any risk to this shaft from its proximity to the southern wall of the East Cachoeira Mine.

When the plan for the re-opening of the mine in depth was considered, the condition of the wall now referred to was kept in view, contemplating passing it down at a distance, and meeting the lode further westward at the desired horizon in the West Cachoeira. There is good reason to conclude the survey made was done with care, and that the shaft A will reach in depth the desired point, nor does there at present appear to be any reason to apprehend any risk in this shaft, from the circumstance that it has on its northern side jointy ground, from such distance as it must now be from the excavation of the East Cachoeira Mine.

There is no jointy rock on the east side of the B shaft, it being apparently in a similar body of mineral, if not in actually the same body, which is being penetrated by the A shaft, the only difference being the former is about 5 fms. further south than the latter.

Such changes as may arise in the body of the mixed mineral through which these shafts are now passing shall be carefully noted, and advice of the same transmitted by the fortnightly mails.

Advices received Jan. 16, ex steamer *Neva*, via Southampton:—*Morro Velho*, Dec. 17.—Sinking in vertical shafts in November:—

	Fms. ft. in.	Total depth.
A shaft	4 0 2	139 3 2
B shaft	4 0 1	137 2 5

MINES—SURFACE.—This continues unaltered in any material point, the continued rains appearing to have no effect upon the doubtful ground.

VERTICAL SHAFTS.—Since date of last advices, more especially from Dec. 9, we have been working under very unfavourable circumstances through the bad ventilation. The "sink" of both shafts still continues to be in lodey stone, though of a much less auriferous quality than that last passed through.

The crack in the shaft A still coincides with the excavation; its locality in the shaft varies occasionally. The surrounding walls do not appear to be more unsound than formerly: nor do we see any reason for the apprehension of danger.

FOUL AIR.—The impure body does not appear to be issuing through the open crack any longer, but is contained in the water passing through the fissure leading to the old excavations, from which it rises in bubbles on its exit in the shaft.

The heavy state of the atmosphere, consequent upon the heavy and constant rains, has tended to retard this mass of impurity, which latterly was found to be ascending in one shaft passing through the 40 fm. level cross cut, and descending in the other. The impurity has been such occasionally as to extinguish candles, lamps, and snuff thick wicks used for lighting the charges; and we suspect that the duty of the safety fuse has somewhat failed through it.

IMPROVED VENTILATION OF SHAFTS.—The plan of turning down a stream of water for No. 1 plunger cylinder has been found insufficient to remove the foul atmosphere. Ever since the 2nd inst. we have been engaged in putting down air pipes, through which we intend driving a blast by a fall of water from the landing place to the adit. This apparatus was completed on the 13th inst., and affords a good supply of fresh air in at the horizon of the pipes exit, but, unfortunately, the foul air is still below, and circulates above this horizon. The former we can stop by putting in two dividing pieces and bringing down the air pipes into the sink, the latter is already being remedied by blocking up the 40 fm. and 80 fm. cross cuts. The arrangements will occupy some time in execution.

Last night the dense cloud of impurities was removed by lighting a large fire in a contrivance resembling a chestnut stove, which, for the time, caused great inconvenience, but when water was turned down the shaft, had so lightened the former foul air, that the atmosphere became clearer than it had been for many days past.

SINKING TO DATE.—The measurements yesterday showed the depth to be in—

	Shaft A.	Shaft B.
On Dec. 1, it was	141 fms. 1 ft. 2 in.	139 fms. 0 ft. 2 in.
Sinking in 15 days	139 3 2	137 2 5

The depth sunk is small, but the preceding mentioned circumstances will, I trust, be considered sufficient to explain the cause of the low duty.

The men have worked well and resolutely in endeavouring to perform their duty. The produce of the stamps at Morro Velho during November has been—

.....	243 18 8
Showing profit of.....	£ 46 16 0
THE OUTLAY AT NEW SHAFTS.	
Surface works	Rs. 3705 89 7, at 25½d.....
.....	£397 12 4

Showing a loss of.....£211 3 9

FRANCA PAES ESTATE.
The produce at the Gaia stamps for November was—

554 oits., equal to 2545-1000 lbs. troy. It was shipped per the Royal Mail steamer Neva, and has duly arrived in London.

DON PEDRO NORTY DEL REY (Gold).—Report for November:
Produce and Cost: produce, 5963 oitavas, at 8s. 6d. per oitava = 2534l. 5s. 6d.;

Showing profit of.....£46 16 0

THE OUTLAY AT NEW SHAFTS.
Surface works.....Rs. 3705 \$977, at 25½d.....£397 12 4
Sinking and timbering.....Rs. 8405 \$785, at 25½d.....£901 17 4

Total.....£1299 9 8

SINKING IN VERTICAL SHAFTS.—Dec. 1 to 15:—
A shaft.....1 fm. 4 ft. 0 in.
B shaft.....1 fm. 3 ft. 9 in.

GOLD TROOP.—The troop was dispatched from Morro Velho on the 11th December to Ouro Preto, and duly reached Rio de Janeiro, with one box, containing 2554 oits., equal to 24 545-1000 lbs. Troy. It was shipped per the Royal Mail steamer *Neva*, and has duly arrived in London.

DON PEDRO NORTH DEL REY (Gold).—Report for November: Produce and Cost: produce, 5063 oitavas, at 8s. 6d. per oitava = 25347 5s. 6d.; cost, Rs. 23,115 \$743 at 25½d. per milreis = 30609 10s. 4d.; loss, 5266 4s. 10d. First Division of December: Weighted to date, 2775 oitavas; remittance 10,022 oitavas. The produce per ton is lower, the proportion of the pyrites in the stone from Foster's south-west and deep adit bottom having been small and unsatisfactory.

ANGLO-BRAZILIAN (Gold).—Report for November, from the managing director (Mr. Dawson): The produce amounts to 1149 oits., derived as follows:—

	Oits.	Tons.	Oits. per ton.
Wilde's	371	150	2 473 General ore and smalls.
Victoria, S.	688	420	1 519 Quartz and killas.
" N.	105	155	0 677 Killas.
Arrastres	1114	725	1 536
	35		0 948

1149 725 1 584 average per ton.
PRODUCE AND COST.—Passagem cost.....£1073 19 1
1149 oits. at 9s.....517 1 0

Loss.....£556 18 1
Exchange.....25½

GENERAL REMARKS.—Cost has been unusually high, by an advance in the price of provisions, and an excess of issue of ironwork for the mine and reduction department. The supply of stone for the past month has been principally derived from Dawson's top lode. The amount treated shows an excess of 187 tons to that for the month of October. The produce per ton is lower, the proportion of the pyrites in the stone from Foster's south-west and deep adit bottom having been small and unsatisfactory.

MINES.—Raisings from Dawson's top lode have been very favourable, the improvement in the stone being freely maintained. Deep adit bottom stopes have contributed but sparingly, the class of ore being very inferior. The appearance of the ore being very inferior. The appearance of the lode at this point is less favourable, including bands of unproductive killas having very much discoloured it, with an absence of concentration of the pyrites.

First division of December (16th): Remittance, 2230 oitavas.
GENERAL REMARKS.—Produce remains unaltered. Amount of ore treated fairly up to that for last month. The quality of the stone from Dawson's continues favourable. Deep adit bottom stopes have been temporarily suspended, the general body of lode being greatly discoloured.

GENERAL BRAZILIAN.—Mine captain's report for November: Very little ground has been expended during the past month, the force being engaged chiefly in repairing some of the levels, and securing Moore's shaft, and doing various jobs at surface, such as making and clearing drains for carrying off the rain-water from the mines and repairing regos, &c. At Itabira three stamping mills have been working about three hours per day stamping stuff from some old burrows at surface. The launders bringing in water to the above stamps have been repaired.

ROSSA GRANDE (Gold).—Report for November: The cost for the month amounts to \$107 14s. 7d. During the month the total daily average of force employed has been 1612, and from both mines and regos 90 tons of ore have been put to pile, worth on an average 10 oits. of gold per ton: the quantity from the mines has been obtained in sinking and driving only. The lode in the Bahu, as I have remarked in previous reports, is opening out splendidly, and the results, after stamping is commenced, will fully corroborate my expectations. In the Cachoeira I have not seen enough of the lode in depth to hold out equal hopes of its making so lasting a mine; but as far as the lode has been explored on I can excavate same at a fair profit. The cost cannot be considered excessive, taking into account the rather extensive underground operations carried on, including the remedying of the roadway, rendered indispensable in consequence of the greater depth attained. It will also become absolutely necessary, in a short time, to effect communications between the respective levels being driven, in order to obtain ventilation, and to provide for a more expeditious plan of stoping the lode.

There have been 20 tons of ore put to pile from the Mina da Sierra Corrego during the month, and 12 oits. of gold extracted from sand accumulated in washing.

SAN PEDRO.—Richard M. Kitto, Nov. 30: The new shaft is sunk about 25 metres below the 135 fm. level, sinking by eight men, at 840 per metre, the ground still favourable. There is a little more water in the shaft, which is coming from the 110 fm. level, Manto Verde. This will not impede the sinking. After this work is completed we shall be in a position to prove the ground in this direction, which may lead to a great discovery, as there is very little done on this part of the mine below the 47 fm. level. The 135 fm. level, driving south, is communicated; we are now engaged in putting a tramroad, and also stoping the bottom of the level. We have a splendid lode of ore here (on this west part of Manto), worth 10 tons of 30 per cent. ore per fathom. The 135 fm. level new end, on the north part of Manto, will produce 3 tons of 25 per cent. ore per fathom. The stopes in the back of the 135 fm. level, south part of Manto, will produce 20 tons of 30 per cent. ore per fathom. The 128 fm. level, driving west, has fallen off in value since my last, it will now produce 1 ton of 20 per cent. ore per fathom. We are getting near the edge of Manto here, and shall soon have to alter the direction, either to drive north or south, or if we could draw the stuff I would put on two levels at this point. A stop in the back of this level (128) will produce 10 tons of 20 per cent. ore per fathom. In the 122 fm. level, driving on the edge of Manto, on the north side, we have made a splendid discovery, having met with a lode of ore 4 ft. wide, which will produce 6 tons of 30 per cent. ore per fathom. The 110 fm. level, driving west, is without change since my last, still producing good stuff of ore, but not sufficient to value. The 30 fm. level is a little improved, and will now give 2 tons of 30 per cent. ore per fathom. We are still engaged in taking out the foundation for the engine-house, the foundation for the boilers is completed, and the new dressing-floors are being carried on with all dispatch.—*Santa Helena Mine*: A chillon sinking on the course of Manto is producing good stones of ore.—*San Antonio Mine*: The new shaft sinking from surface, by six men, is progressing very favourably. In conclusion, I beg to state the San Pedro Mine is looking splendid, and everything working well.

SÃO VICENTE.—The operations at the mines (Brucutu) up to the 7th inst. had been going on much as usual; when, in consequence of a letter received from the agents, I reduced the staff as much as possible. I have put in these trial levels on the course of the lines in the deep adit, for the purpose of testing their value; they show traces of gold in sampling, but nothing as yet to pay—in fact, 20 tons will not yield more than 1 oit. At the São Vicente operations are confined to the large deposit of quartz, which is opening out in appearance as well as any person could expect; it is hard and spare for working, consequently we cannot break a large quantity of stone until we have a greater extent laid open, which requires time and patience.

BRAGANZA A.—Dec. 15: Since last report we have driven 2 fms. 5 ft., and by rising and sinking we communicated with the sink yesterday, and let down the water; it appears at present an irregular formation embedded in the strata, without any perceptible walls as yet, and that makes it difficult to blast. However, I hope by the end of this month to convey the stuff to the stamps, and ascertain its real produce and the size of the lode.

CHONTALES (Gold).—Mr. Smeddle, Dec. 5: Gold returned for the month of November 402 ozs., from 2004 tons of stuff; average yield, 4 dwts. per ton; value, 1127 5s. 7d.—Cost for the month, 770 16s. 9d., which includes 250 for labour in constructing an embankment across St. Domingo Valley, which will increase the supply of water to the stamps. The mines are improving, and Mr. Smeddle was making the necessary arrangements for the erection of the additional 12 stamps and steam engine, as well as the construction of the tramway to San Sebastian Mine. The health of the establishment is good.

—J. Tonkin, D. Tonkin: Herewith we beg to hand you our report of the mines for the month of November:—East San Benito Mine: A stop in the back of No. 2 level, the lode is 12 ft. wide, worth 50 varas; the lode itself is from 12 to 14 ft. wide, which we take out in three stopes, each from 4 to 5 ft. wide, and carry them separately to surface, and fill up with refuse; stopes worked during the past month 4 dwts. of gold per ton. A stop in the back of No. 1 level has been stopped 4½ varas; lode 3 ft. wide, worth 3 dwts. of gold per ton. The No. 2 level has been driven east on the lode 15 varas; lode 4 ft. wide, worth 2 dwts. of gold per ton. We have risen in the back of the same level 16 varas; lode 4 ft. wide, worth 3 dwts. of gold per ton.—*Santo Domingo Mine*: A stop in the back of the intermediate level, west of cross-cut, has been stopped 70½ varas; lode 7 ft. wide, worth 5 dwts. of gold per ton. A stop in the same level, east of cross-cut, has been stopped 10 varas; lode 5 ft. wide, worth 3 dwts. of gold per ton. A stop on surface, on the south part of the lode, has been stopped 26 varas; lode 4 ft. wide, worth 3 dwts. of gold per ton. The intermediate level has been driven west on the lode 27½ varas; lode 6 ft. wide, worth 4 dwts. of gold per ton. The same level has been driven east on lode 15 varas; lode 5 ft. wide, worth 2 dwts. of gold per ton. The deep level west has been driven on the course of the lode 5½ varas; lode 2 ft. wide, showing a little gold, but not to value. The quantity of quartz sent to the stamps is as follows:—From East San Benito Mine 930 tons, yielding 3½ dwts. of gold per ton; from Santo Domingo Mine 1074 tons, yielding 4½ dwts. of gold per ton; in all, 2004 tons—402-000 ozs. of melted gold.

EMMA.—Telegram from Salt Lake City, Jan. 13: Raised 170 tons first-class ore last week; 450 tons first-class ore at railway depot; 80 tons first-class ore raised at mine; 220 tons sold here.—*HUSSEY*.

SIERRA BUTTES (Gold).—Result of working at the Sierra Buttes and Plumas Eureka Mines for December, received by telegraph on Jan. 11: Sierra Buttes: Receipts, \$27,553; cost of mining and milling, \$13,942. This clean-up resulted from two mills only.—Plumas Eureka: Receipts, \$16,340; cost of mining and milling, \$7829. The old mill at this mine run only part of the month.

JAVALI.—The directors are in receipt of advices from Capt. Johns to Dec. 5, accompanying a remittance of 401½ oz. of gold, valued at 1060½, obtained from 1500 tons of quartz crushed during the past month. Of this 1300 tons were taken from the surface deposits, which are found to improve in quality, and are of very great extent. Part of the new machinery had been received. Profit on the month's working, 57 13s. 3d.

GOLD RUN.—O. S. Kipp, Dec. 24: For the past 48 hours it has been raining fearfully, the ditches are full of water. As soon as the storm is over, if not too cold and freezing nights, I shall start your claims to operating. So far the storm has been very mild; I think it will clear up warm and pleasant. I received your letter advising me of the decision of your company in sinking a perpendicular shaft. I heartily agree with the company. I did not hasten a reply to your letter for the reason that I wanted to fully decide on the proper place to sink. We all agree on the location of the shaft, and in order to more readily command our works we all think it is advisable to make another run in the bottom, which will be our first run this season, before commencing to sink. Certainly it will be a very good one, and the difference in the time would be but a few days. I was away at least 60 ft. of the dirt. Within the next 40 days I am in hopes of advising you of a good run and a handsome dividend.

MONTE ALBO.—Jan. 2: Su Egioli: We have resumed the sinking of the new shaft; it has now attained the depth of 5 metres below the No. 6 level. The lode is 1 metre wide, composed of quartz and white iron, intermixed with spots of ore, and yielding of the latter ¼ ton per metre. We have suspended the driving of the No. 6 level south for the time, and have just put the men to rise in the back of the level to communicate with the No. 5 level above. The rise was set yesterday, and will yield ¼ ton per metre. The lode in the present end of the No. 6 level is poor. We have had to suspend the driving of No. 5 level south owing to the quantity of stuff which has accumulated in the passes from the stopes. We have suspended for the time the driving of the No. 6 level south on the course of the lode from the new shaft, owing to foul air, and have put the men to rise in back of this level to communicate with the old workings above. The rise is at present poor.—*Stopes*: No. 1 in the back of the No. 5 level, north of new shaft, will yield ½ ton of ore per metre. No. 1 in the back of this level, south of new shaft, will yield ½ ton of ore per metre. No. 2 will yield ½ ton, and No. 3 ½ ton per metre. Julius Cesar cross-cut is still being continued, and is without change since last reported on.—*Napoleon*: The winze sinking in the bottom of the level has now attained the depth of 11 metres. During the past month we have had a good lode ore, 4 metres deep, which yielded about 1 ton of ore per metre. To-day it is not so good, but is producing good stones of lead and copper ores.—*Stopes*: Nos. 1 and 2, in the back of the Gallerie Nuova, will yield each of them ½ ton of ore per metre. During the last eight days we have had some rain, which has done us much good. We hope to start the crusher engine in a day or two.

CAPE COPPER.—The Lynwood, with outward cargo and to load ore home, had arrived out. The William Leckie and Try Again had together taken on board 460 tons (part cargoes); and the Antonio Vincent had arrived at Hondeklip on Nov. 12 to complete the cargo for Swanes. The 350 tons of ore, ex Tacna and Galathea, sold at the Ticketing on 7th inst. at 18s. 1¼d. per unit, realising approximately 9100l.

BENSBERG.—J. W. Hoffmann, Jan. 11: The men this week have been chiefly employed in getting wash ore, removing the drums and water tanks from their former position in order to get the ground clear for getting at the bed of carbonate, moving some banks which stood in the way, prolonging the tramway on the banks, and clearing away the old engine-house. We commenced at the pit-head on Saturday. The water in the open-cut is sinking; production of rock ore, 20 tons, 10 per cent. assay.

MENZENBERG.—R. K. Roskilly, Jan. 11: The ground in Dickens's shaft during the past week is much improved, and the water has fallen off, which we attribute to the several days dry weather. Should the ground continue as at present the men will sink this month at least 4 fms.; so if we sink 4 fms. per month we shall not be long arriving at the 40, at which point we ought to meet with something good. Good progress is being made in building the engine-house, and it will be ready to receive the roof in about a week's time. All other surface work is progressing satisfactorily.

LANESTONA.—Jan.: Esperanza: At the pitches at Caves there are still small veins of calamine in sight, but the points are generally poor.—*Santa Lucia*: Finding the dolomite bed without end in driving incline, the men are put to sink through to the limestone, when, if nothing is cut, driving will be commenced where the ore was last seen.—*Asuncion*: Exploring through ancient works we are still spilling through debris which yields a little ore.—*Glannafon*: The lode, in sinking San de Uso shaft, is 3 ft. wide at the bottom, composed of silicious rock, with strings of lead and calamine. In driving cross-cut from deep adit the rock is very hard, and progress is consequently slow.—*Aurora*: The driving of Ana adit is suspended. Parado's shaft is now 20 fms. deep, and, as sinking deeper with tackle is difficult, the driving through the lode will be commenced to prove its value and character before incurring the expense of a whim, &c., for going further.—*La Flora*: The driving of deep adit continues in hard massive calcareous spar, it occasionally shows branches of lead, but is generally poor. Sinking winze from deep adit is now passing through a large cavity or vugh. The lode continues on hanging wall 3 ft. wide, composed of gossany calcareous spar, with a good leader of lead, yielding 1 ton of the latter per fm.—*La Luisa*: Sinking winze from Ventura adit, we are still spilling through old works. The debris is more sandy, and shows more water, which gives hope of being near bottom. The contract of ore for present month depends upon the yield at La Flora, and therefore but little can be said about it, this point being so variable.

[For remainder of Foreign Mines, see to-day's Journal.]

EBERHARDT AND SOUTH AURORA.—The current number of Mr. T. G. Taylor's Circular contains a considerable amount of information of especial interest to shareholders in both these companies. It may be remembered that Mr. Taylor was mainly instrumental in bringing about the satisfactory arrangement by which the South Aurora Company has found remunerative employment for its Stanford, and at the same time an immediately commercial value has been given to the produce of the Eberhardt Company—an arrangement which cannot fail to prove advantageous to all concerned. The Circular well deserves perusal.

THE PATENT DOWNTAKE BOILER.

Fig. 1.

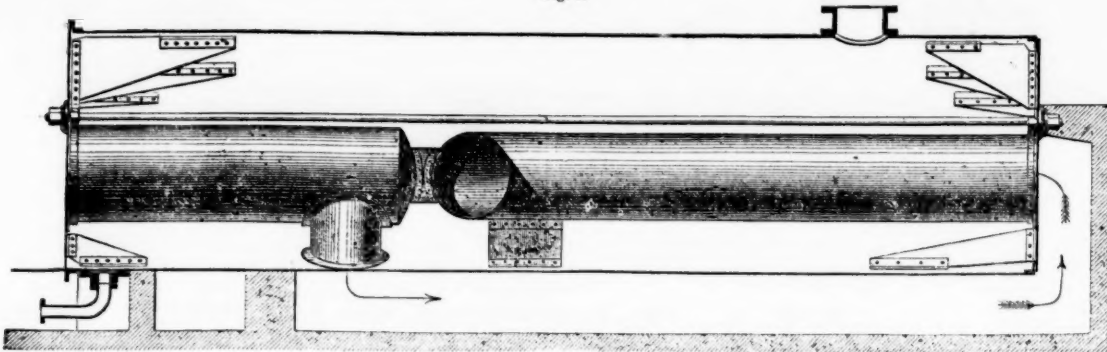


Fig. 2.

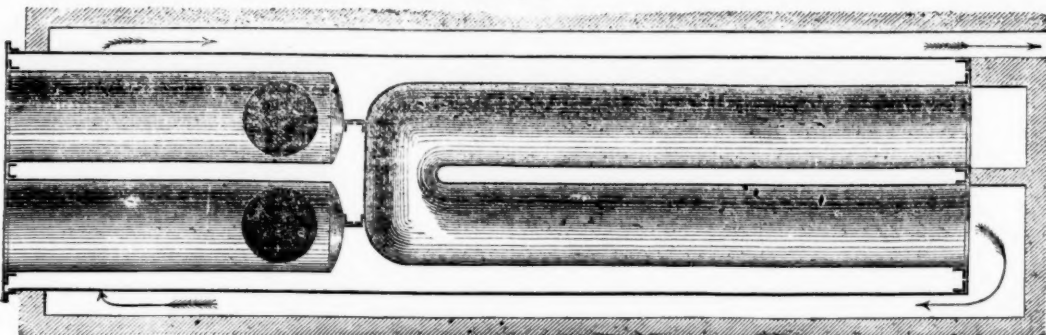


Fig. 3.

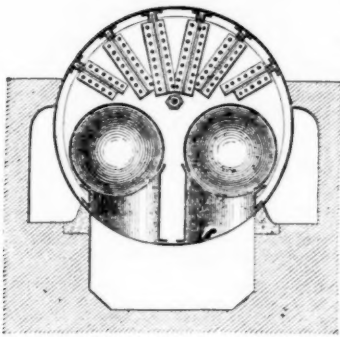
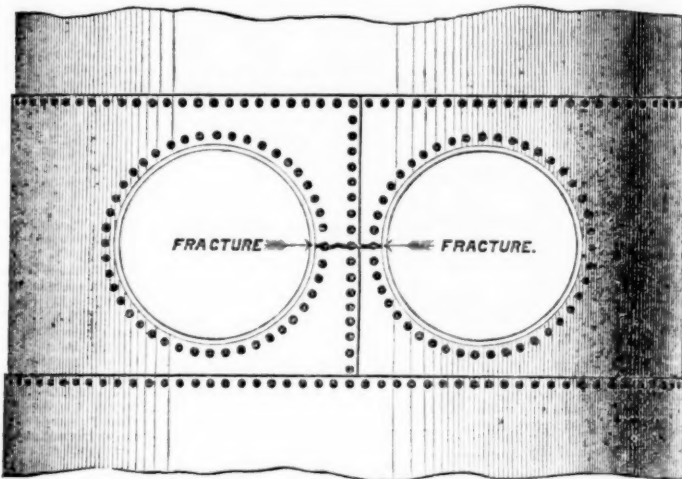


Fig. 4.



THE PATENT DOWNTAKE BOILER.

In a recent report of the chief engineer of the Manchester Steam Users' Association a few of the many objections to the downtake principle of construction are pointed out. The boiler is an objectionable modification of the Lancashire boiler; like it, it is set horizontally, is cylindrical in the outer shell, is flat ended, and contains a couple of internal furnaces; but it differs in the material point that the furnace tubes instead of running right through from end to end of the boiler scarcely extend half way, and terminate in "downtakes" connected with the bottom of the outer shell, through which holes are cut for the passage of the flames, while the flue tubes instead of being a continuation of the furnace tubes are quite separate and wrought into a single flue of horse-shoe shape, having its ends attached to the back end plate. The flames immediately after quitting the furnaces pass through the downtakes to the bottom of the shell, and along underneath it till they reach the back of the boiler, when they enter the horse-shoe shaped flue passing up one side of it and down the other, after which they traverse one side of the external shell from front to back, and then passing underneath it return on the outside from front to back and pass off to the chimney. The course of the flames is tortuous, and the construction generally has serious objections.

In the Lancashire boiler the flue tubes running from one end to the other form most valuable ties, which not only support the flat ends, but also lash together the external shell longitudinally, which is of great importance in the event of rupture at any of the transverse or circumferential seams of rivets. But the loss of longitudinal strength is not the only objection to which these boilers are open. The passage of the flames from the furnaces through the bottom of the external shell necessitates two outlets being cut through it, measuring as much as 2 feet in diameter. These have a very weakening effect, and are opposed to all modern boiler making practice, in which cutting holes in the shells is avoided as much as possible. All the experience the Association has accumulated is decidedly in favour of internal firing rather than external, and, therefore, it cannot approve of the mode in which the downtake boiler is heated. Not only is it complicated and the course of the flues tortuous, but its construction is faulty, inasmuch as, firstly, the furnace and flue tubes are severed, in consequence of which the longitudinal tie they would otherwise afford is lost; secondly, two large openings have to be made in the bottom of the shell for the downtake outlets; and, thirdly, the flames are allowed to act on the bottom of the shell immediately after leaving the furnaces.

In the above diagrams Fig. 1 represents a longitudinal section of the patent downtake boiler; Fig. 2 the plan; and Fig. 3 the transverse section. The remaining figure is an enlarged view showing the fracture at the bottom of the downtakes, which formed one of the dangerous fractures discovered by the officers of the Association. In this case the plate at the bottom of the external shell was found to be completely severed between the two downtakes, which was of the more importance as the shell was already weakened at that part by the large downtake openings. This rent was first discovered on getting up steam on Monday morning. When the steam was raised to a pressure of about 18 lbs. the water was noticed to fall rapidly in the glass water tube, in consequence of which the attendant drew his fires, and on getting into the external flues found that the boiler was leaking, and that the plate between the downtakes had rent as described. When this boiler was first brought out the Association viewed it with considerable suspicion in consequence of its loss of longitudinal strength, the large openings cut in the bottom, and the action of the flames upon the outer shell, and it has not failed to express those views to the members on every suitable opportunity, and, as already stated, to get additional stays put in to meet the difficulty as far as possible. The Association, however, has felt some delicacy, perhaps too much delicacy, in enforcing its own views lest it should unwittingly be impeding trials that might ultimately prove of advantage. It has not, therefore, hitherto felt justified in going further

than warning its members of the danger it considered was attendant on the use of these boilers, and inducing them to put in extra stays, as well as to keep down the pressures. The defects, however, that have manifested themselves in their working, though these boilers are of recent introduction, and thus quite in their prime, show that it is incumbent on the Association to take a firmer stand with regard to them for the members' safety and its own reputation. Those members, therefore, using these downtake boilers must be good enough to understand that they are earnestly recommended to cut out the downtakes and horse-shoe shaped flue tubes, and to introduce in their place straight furnace tubes running right through from one end of the boiler to the other, and also to blank up the large openings at the bottom of the external shells. No course short of this will be permanently satisfactory, and the Association cannot take upon itself, but must leave with the members, the responsibility of any defects that may arise at the bottom of the shells of those boilers in which these patent downtakes and horse-shoe shaped flues are retained.

COMPRESSING FUEL AND OTHER SUBSTANCES.

Mr. J. LODGE, of the Whitecroft Works, Lydney, has invented some improvements in machinery or apparatus for compressing fuel, clay, and other like substances, which relate to a peculiar combination of machinery intended chiefly for compressing blocks of artificial fuel, but applicable also to the making of compressed bricks or tiles and to the compressing of other substances into blocks. According to this invention it is proposed to combine together in one machine a rotatory horizontal table, provided with a number of openings or moulds for the reception of the fuel or other substance to be compressed, and within which openings or moulds the compressed block is formed. As the table revolves by a step by step ratchet motion the openings or moulds are successively brought accurately over a vertically moving block, which forms the bottom for the time being of the opening or mould. This block is connected to a weighted lever which affords the resistance to the pressure which is applied by a plunger or sliding block worked from an eccentric on an overhead shaft. The degree of pressure may be varied by adjusting the weight along the weighted lever above mentioned. The revolving table is made hollow and connected with steam pipes for the purpose of heating the moulds or openings by surrounding them with steam, whereby breakage from frost or other cause is prevented and a cleaner and nicer block is obtained. After each block of fuel is compressed it is carried round in its mould as the table revolves underneath another plunger or vertical sliding block, also worked from an eccentric, which plunger descends and forces the compressed block downwards on to an endless travelling band below. This band is driven by a ratchet motion, which pauses and allows the band to remain stationary during the time a block is being deposited thereon. In order to prevent injury to the compressed blocks the receiving surface of the said endless band may be covered with wool, sheepskin, or other soft material. A sliding locking bolt, with bevelled or tapered end, is moved forward by a special cam into one of a series of holes or notches made round the rim of the table for the purpose of ensuring the table being brought accurately into a proper position to receive the pressing plunger, and to hold the table firmly whilst the said plunger is at work, whereby accidents to the machine are prevented. The cams and eccentrics are mounted on a separate cam shaft driven by gearing from the crank shaft of the engine, this cam shaft having a fly wheel of its own in addition to the ordinary fly wheel on the crank shaft, whereby extra pressure is obtained.

FUEL.—Mr. M. RAE, of Uphall, Linlithgow, has patented some improvements in the manufacture or preparation of fuel, which consists in the manufacture of fuel from small coal, finely-divided shale, or bituminous "blae," with bituminous mastic, or preparation of crude shale tar, and in a combined apparatus for drying, mixing, and pressing the same.

BICKFORD'S PATENT
FOR CONVEYING
CHARGE IN
SAFETY FUSE
TO THE
BLASTING ROCKS, &c.

Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1861; at the "INTERNATIONAL EXHIBITION" of 1862, in London; at the "IMPERIAL EXPOSITION," held in Paris, in 1865; at the "INTERNATIONAL EXHIBITION," in Dublin, 1865; at the "UNIVERSAL EXPOSITION," in Paris, 1867; and at the "GREAT INDUSTRIAL EXHIBITION," at Altona, in 1869.



BICKFORD, SMITH, AND CO.
OF TUCKINGMILL, CORNWALL, MANUFACTURERS AND ORIGINAL PATENTEES OF SAFETY FUSE, having been informed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—
EVERY COIL of FUSE MANUFACTURED by them has TWO SEPARATE THREADS PASSING THROUGH THE COLUMN OF GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM TWO SUCH SEPARATE THREADS AS THEIR TRADE MARK.

THE TAVISTOCK FOUNDRY, IRONWORKS, AND HAMMER MILLS,

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Who are in a position to MANUFACTURE ALL KINDS OF ENGINEERING and FOUNDRY WORK, SHOVELS, and MINING TOOLS of every description; and have had a large experience in preparing MACHINERY FOR FOREIGN MINES, As well as selecting mechanics to erect the same.

N., M., AND CO. have always a STOCK OF SECOND HAND MATERIALS.

GIRDWOOD'S PATENT RECIPROCATING CRUSHER

Is the SIMPLEST and BEST PULVERISER in existence. It will do BETTER WORK, and MORE OF IT, on same power than any other yet invented.

Apply for terms to GEORGE GREEN, Aberystwith; or to the patentee, ROBERT GIRDWOOD, Edinburgh.

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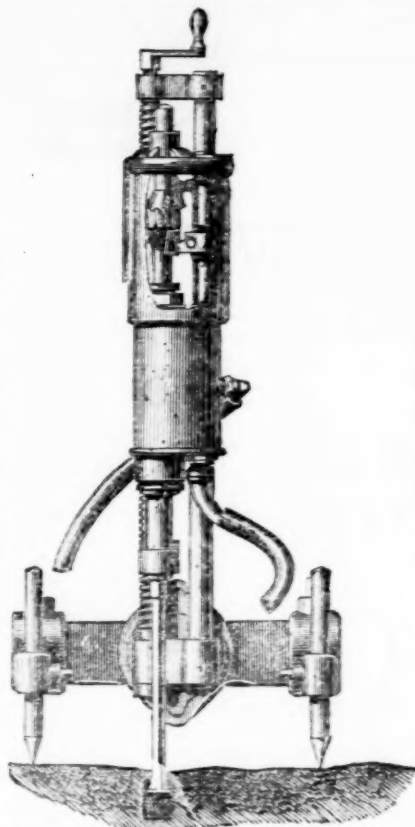


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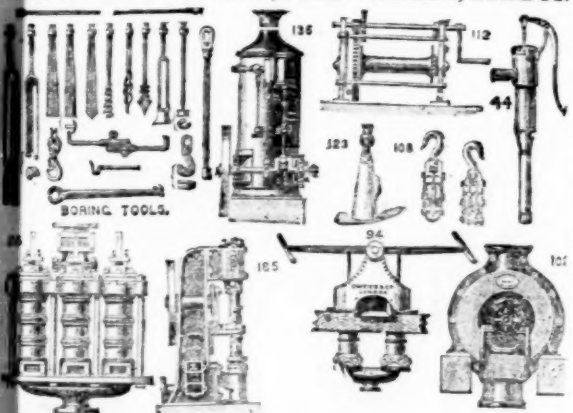
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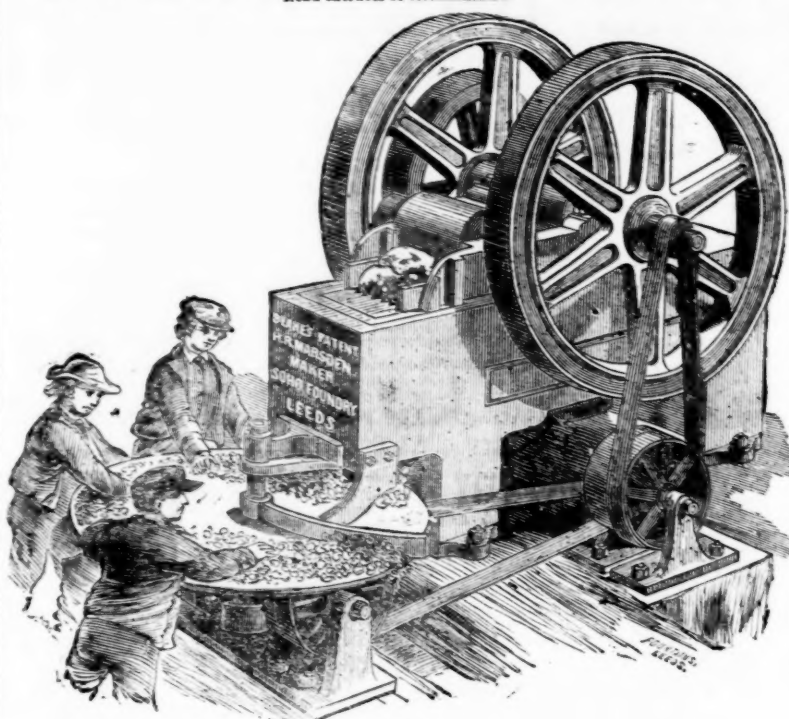
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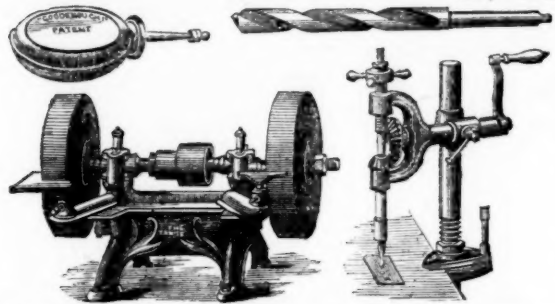
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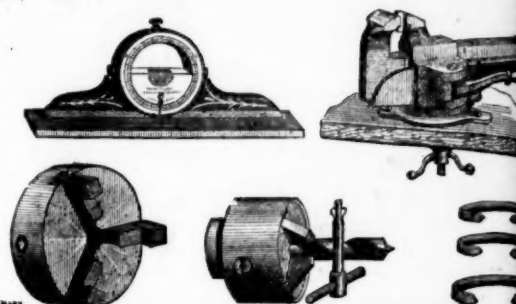
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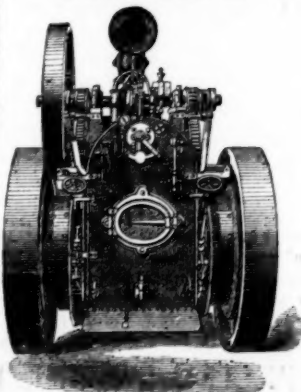
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